THE INDIAN HEALTH SERVICE

RPMS EHR

Electronic Health Record

Howard Hays, MD, MSPH

Superior Health Information Management
Now and for the Future

IHS Technical Conference
June 20, 2006

Objectives

- ~~Why Electronic Health Records?~~
- ~~Demonstration~~
- Overview of EHR
- Current Status
- Site Metrics
- New Features in EHR
- Preparation for EHR

RPMS EHR

IHS · EHR Electronic Health Record

IHS-EHR Home
EHR Clinical Overview
EHR Technical Overview
EHR Walk Through
Preparing for EHR
RPMS EHR Training Courses
EHR Current Status
Key EHR Program Contacts
Patient Information Management System (PIMS) Application
EHR Presentations
EHR FAQ
Feedback
- Reply
User Access
- Add User
- Update User
- Approve User
EHR Listserv
Clinical Applications

EHR Presentations

This page contains links to presentations that have been made recently about the IHS Electronic Health Record. They are shared for your interest and information.

Please note that information in these presentations was current as of the date they were presented. Some information may no longer be current, as the software development and testing process is fluid, and some issues change over time. Presentations will be removed from this site if their content is no longer relevant.

- This presentation was offered in workshops at the 2005 Annual IHS Combined Councils Conference in San Diego. It includes some early metrics from EHR sites as well as discussion of suggested preparation activities.
  NCCD 022805 [PPT-2.2MB]

- The following presentation was made in August 2004 to the IHS Technical Conference held in Scottsdale. The emphasis was on facility preparation for EHR. The open forum including presentations by Dr. Byron and Rudd on the Crow and Warm Springs experience is not captured in this show.
  IHS EHR Tech Conf 082004 [PPT-...]

www.ehr.ihs.gov

- This presentation was offered by Dr. Miles Rudd at the IHS Technical Conference, in August 2004. It describes the EHR implementation experience at Warm Springs Health Center.
  EHR Business Process Improvements [PPT-292KB]

- This presentation was prepared for a site manager's conference in August 2004. It describes the EHR preparation process from the Warm Springs perspective.
  Preparing for EHR [PPT-647KB]

- The following presentation was made in April 2004 to the joint Health Information Management and Business Office conference held in Reno NV. The emphasis in this presentation is on the impact of EHR on medical records, data entry, coding and billing staff.
  IHS EHR HIM-BO Mtg 042204 [PPT-272KB]

- The following presentation was made in May 2004 to the national "Toward an Electronic Patient Record" meeting sponsored by the

The EHR Challenge for IHS

- Produce or acquire an Electronic Health Record system that:
  - Meets clinical and business needs of both Tribally and Federally operated facilities
  - Is scalable to the needs of facilities ranging from small rural clinics to medium-sized hospitals
  - Is affordable to facilities with no resource cushion or ability to borrow
  - Is sustainable into the future

RPMS EHR

RPMS – Elements of an EMR for over 20 Years

Existing elements

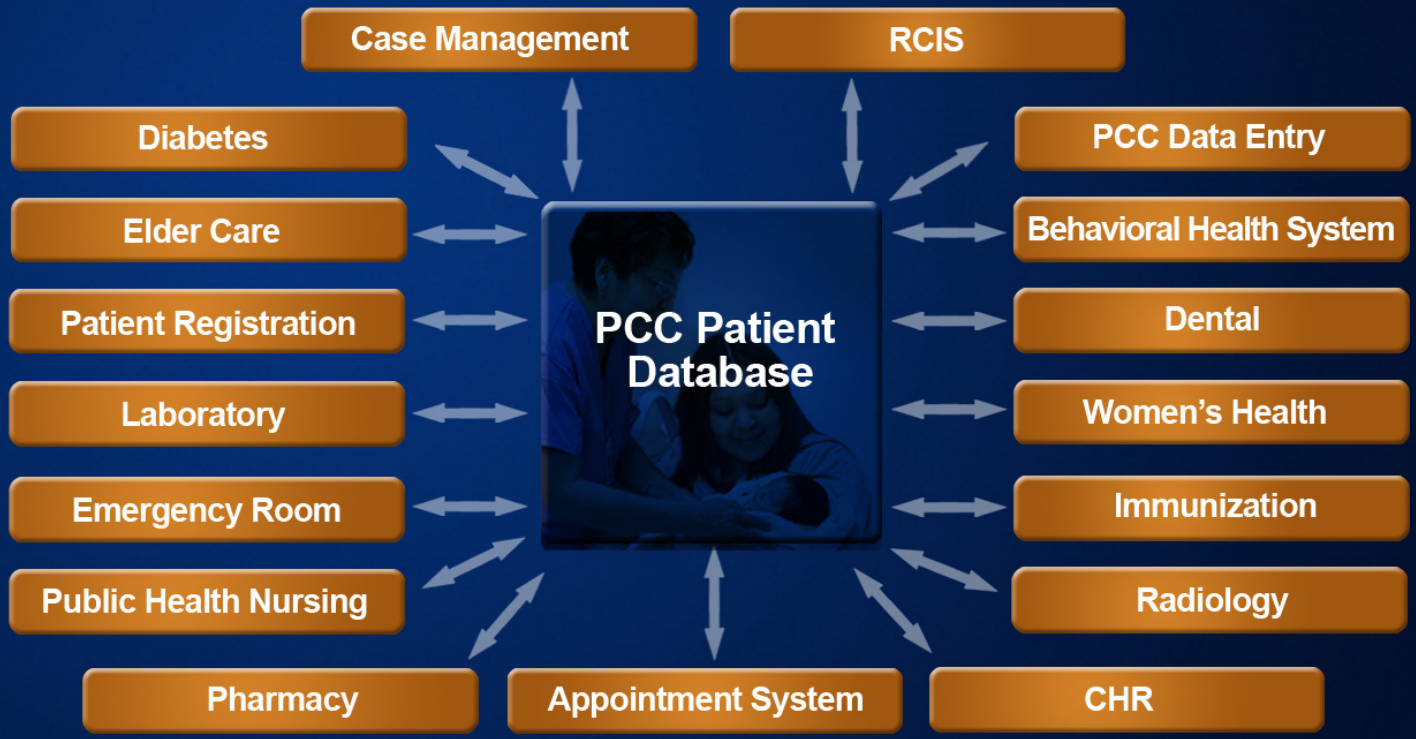
- Registration
- Scheduling
- Pharmacy
- Radiology
- Laboratory
- Immunizations
- Reminders (passive)
- Problem List
- Health Summary
- Other PCC functions
- Billing
- More . . .

Lacking elements

- Provider order entry
- Note authoring
- Point of care data entry
- GUI usability
- Active reminders & notifications

RPMS EHR

RPMS Integrates Multiple Clinical Systems



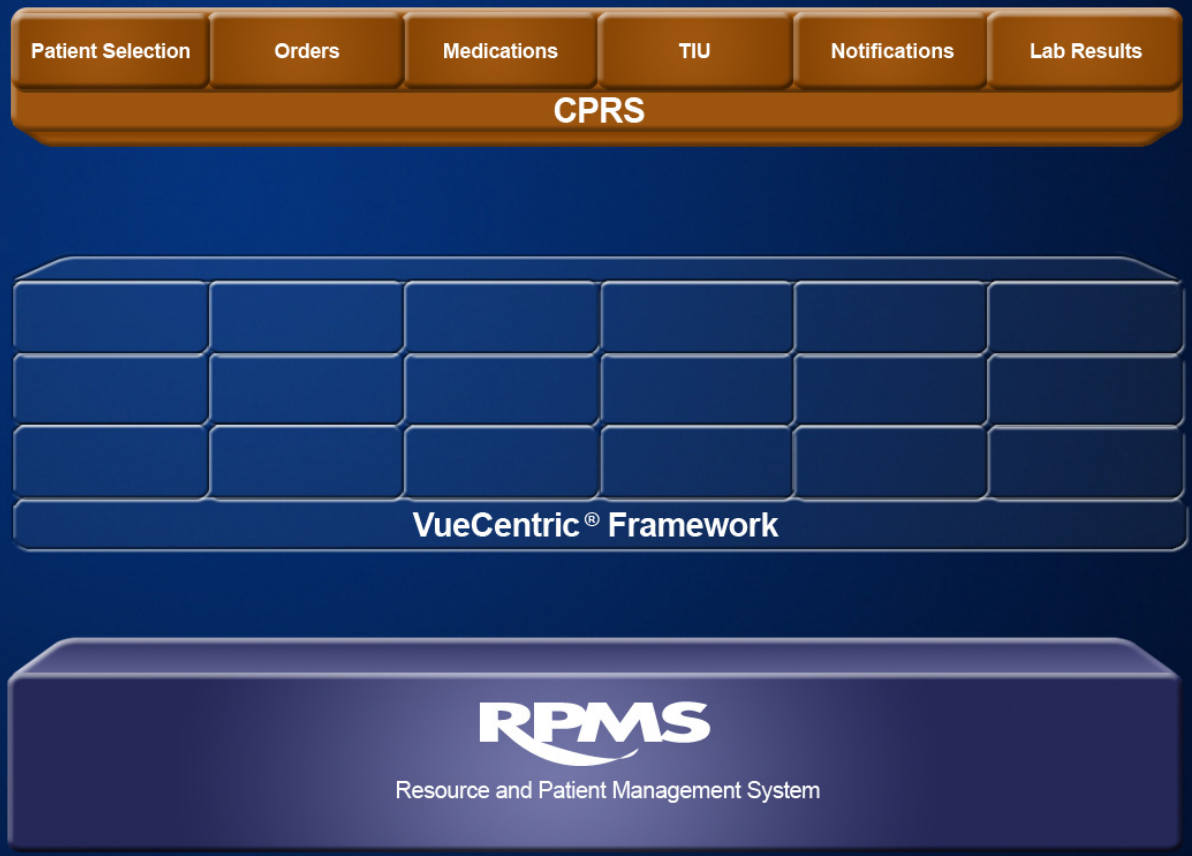
RPMS EHR

What is RPMS EHR?

- Integrated RPMS database
  - Applications adapted from VHA or developed by IHS
- Graphical User Interface
  - User-friendly and intuitive access to RPMS database for clinicians and other staff
  - Components derived from VHA (CPRS) or developed internally for I/T/U needs
  - Proprietary “framework” for presentation of various GUI components
    - Licensed from Clinical Informatics Associates (now Medsphere)

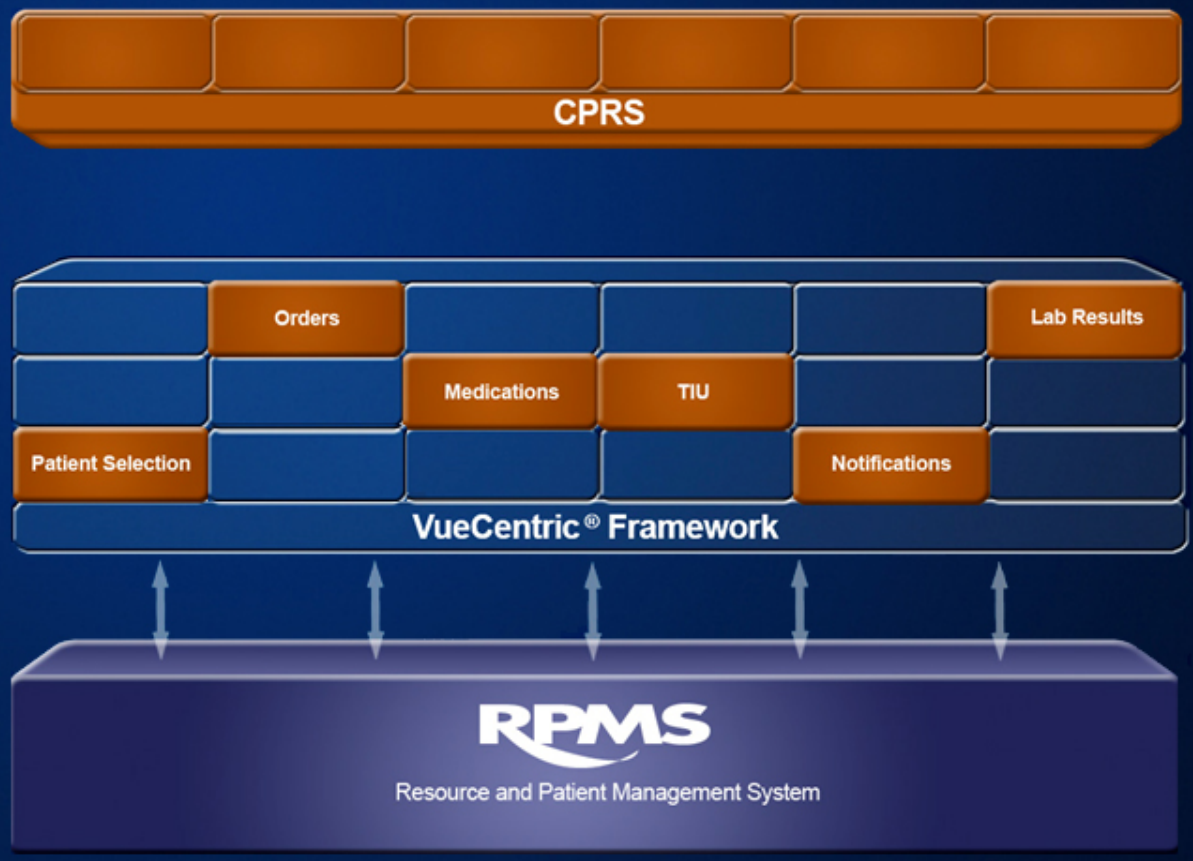
RPMS EHR

The EHR Componentized Framework



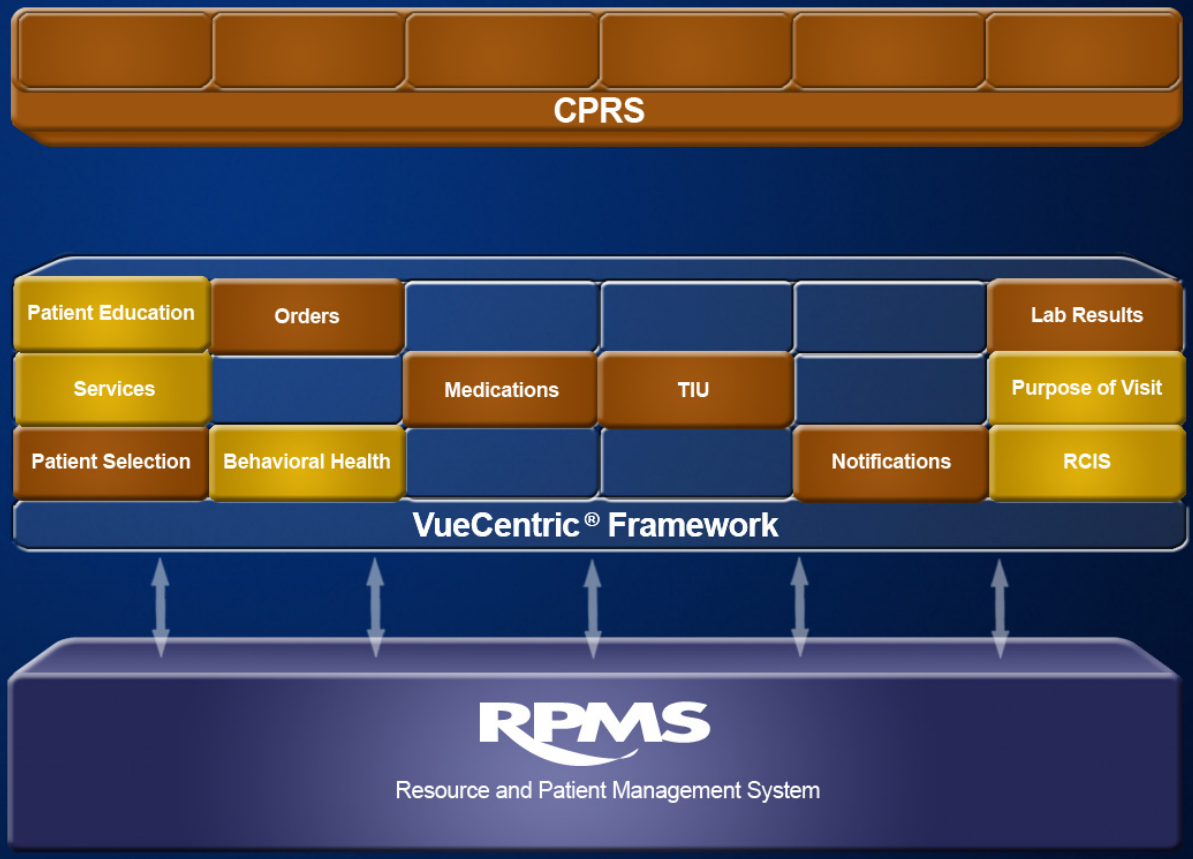
RPMS EHR

The EHR Componentized Framework



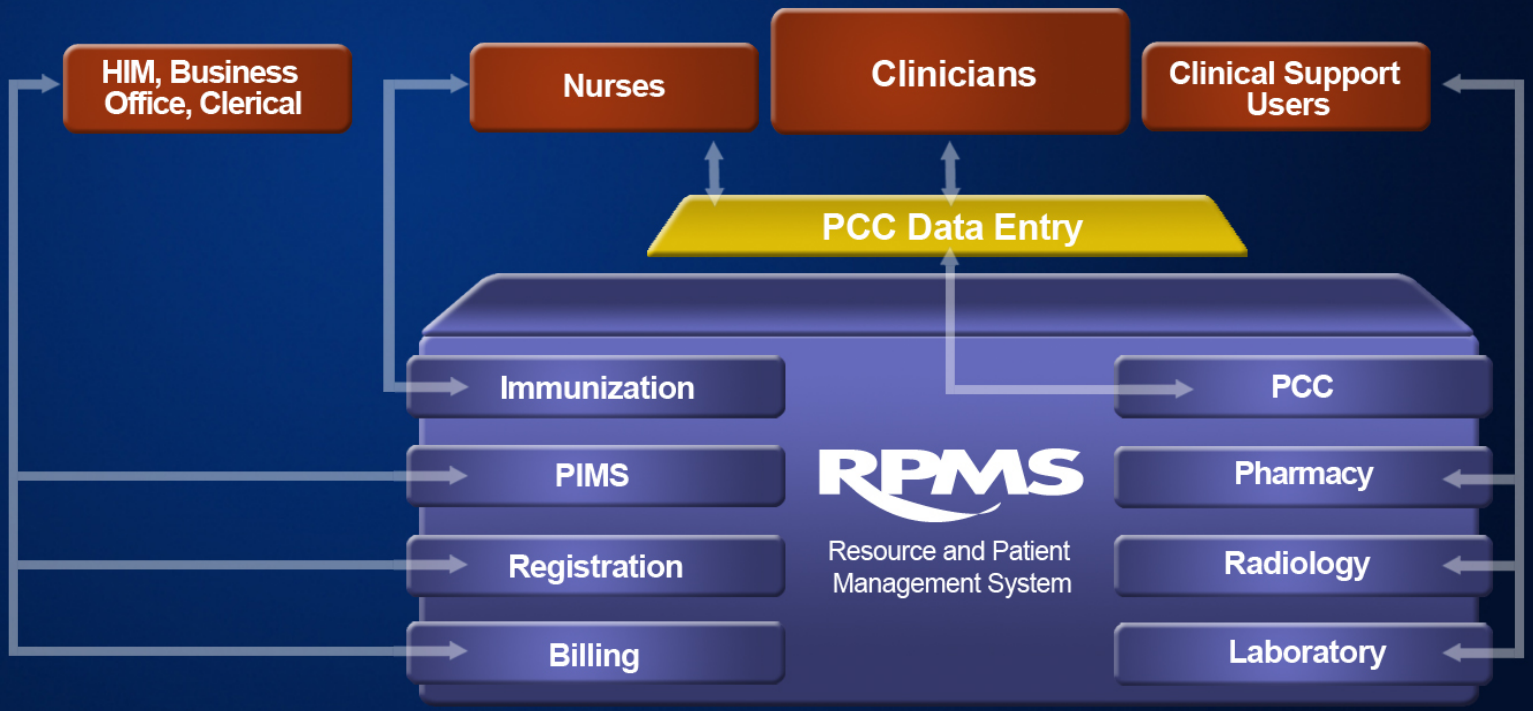
RPMS EHR

The EHR Componentized Framework



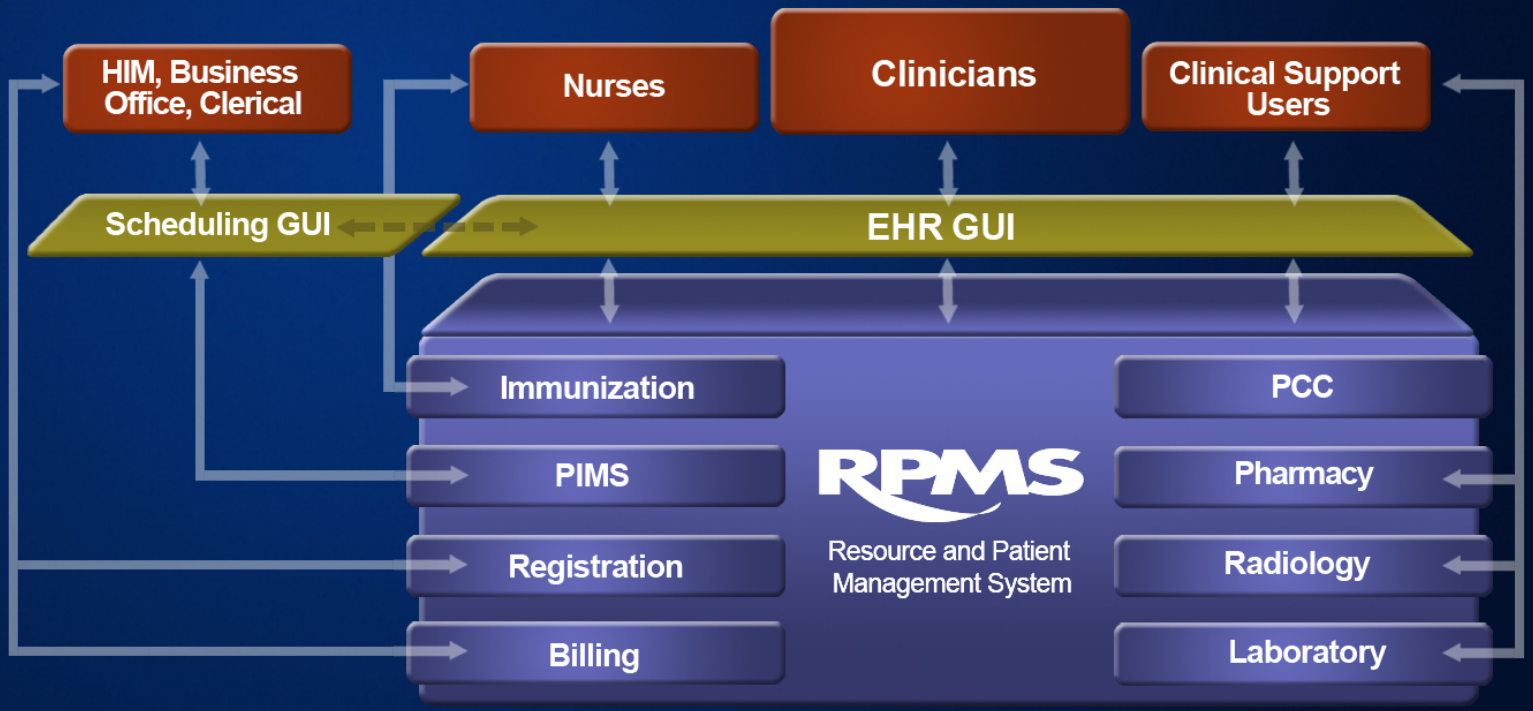
RPMS EHR

RPMS/EHR/User Relationships



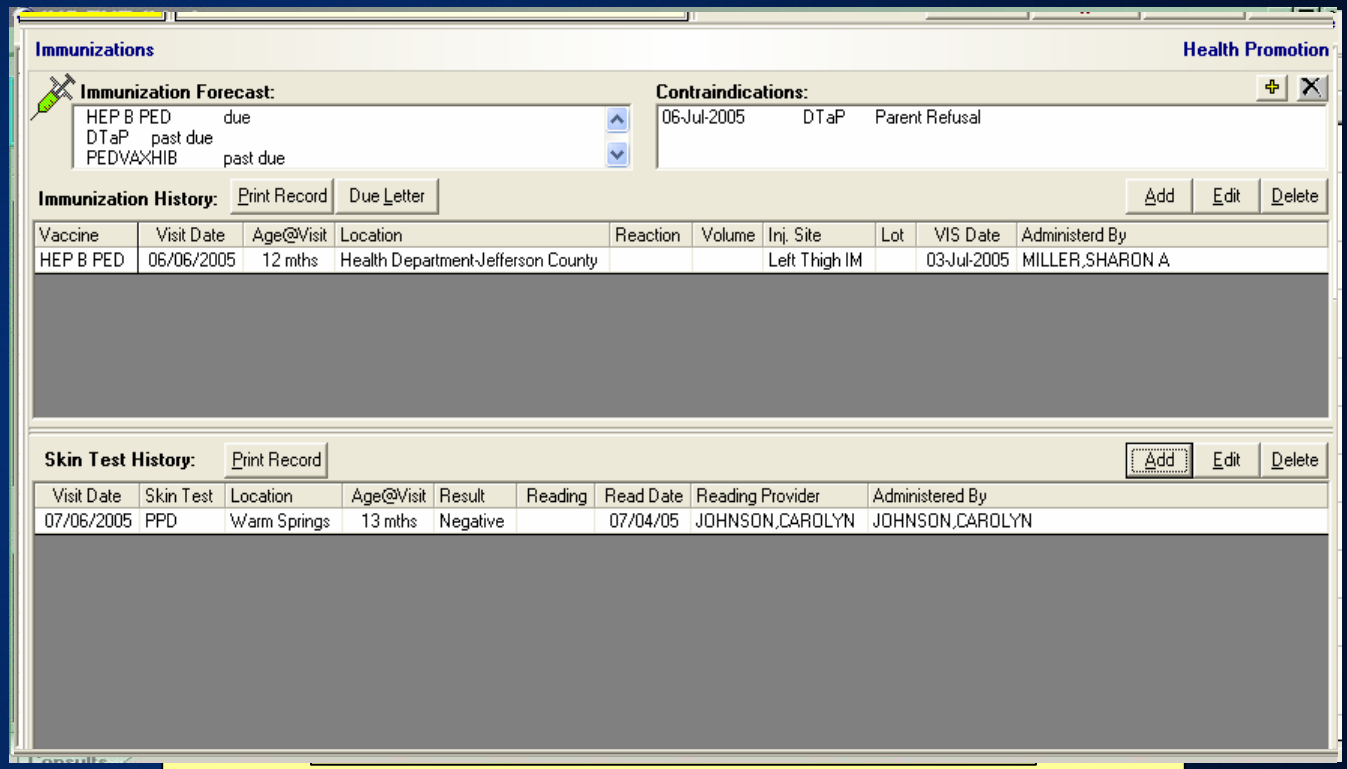
RPMS EHR

RPMS/EHR/User Relationships



RPMS EHR

1993...1994.....1996....1997....2000....2001...2004...2005
JANE DOE LIFETIME DATA



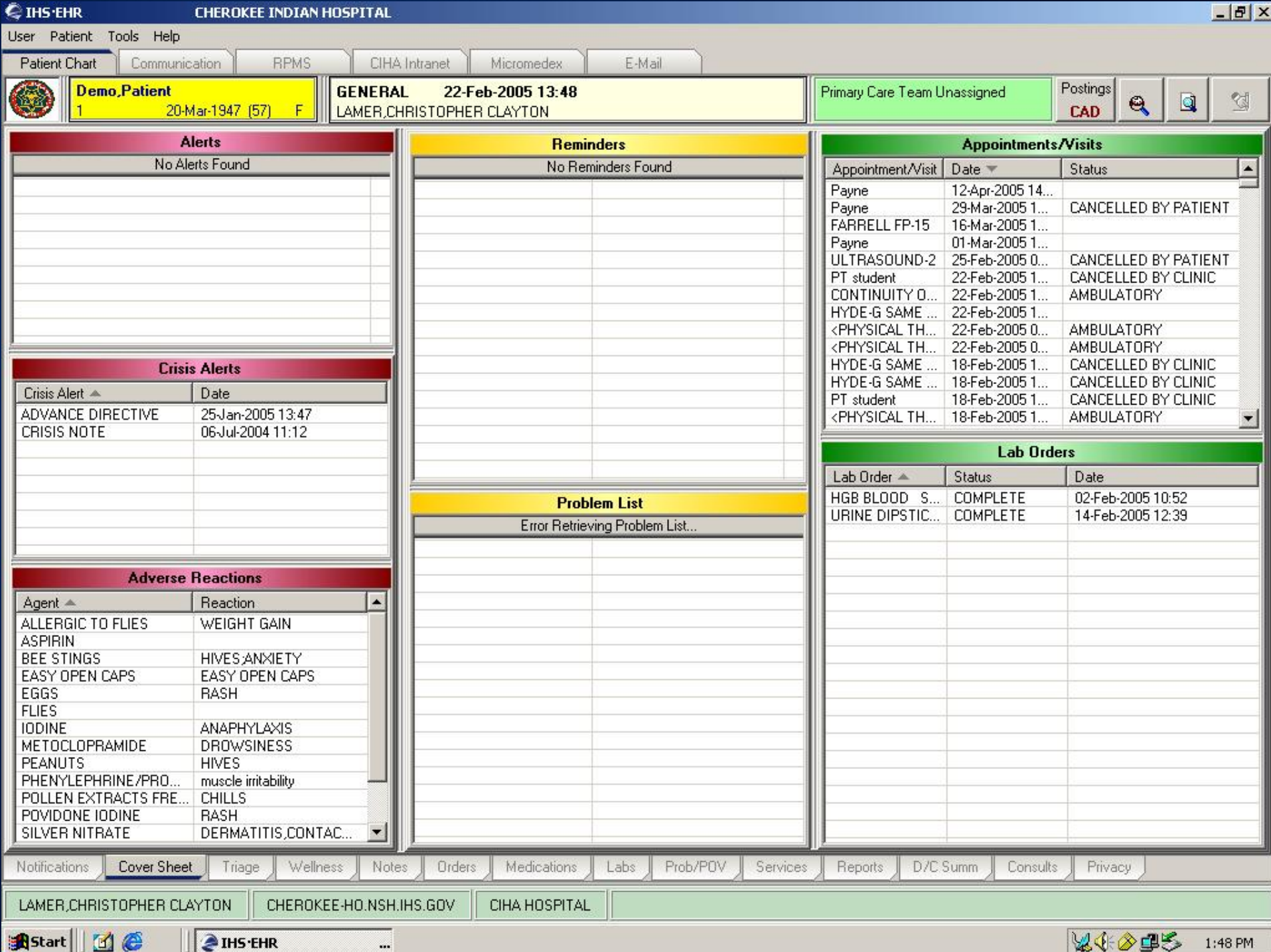
RPMS-PCC

EHR

Advantages of RPMS EHR

- Retains existing RPMS database
  - Users have access to all prior RPMS data
- Same data from EHR and non-EHR sites
  - No interfacing or reformatting of data for national exports
- Extensive customizability at local level
- Full integration of RPMS applications
- Very low cost, no license fees
- Future growth/development
  - Ongoing partnership with VHA, other developers

RPMS EHR

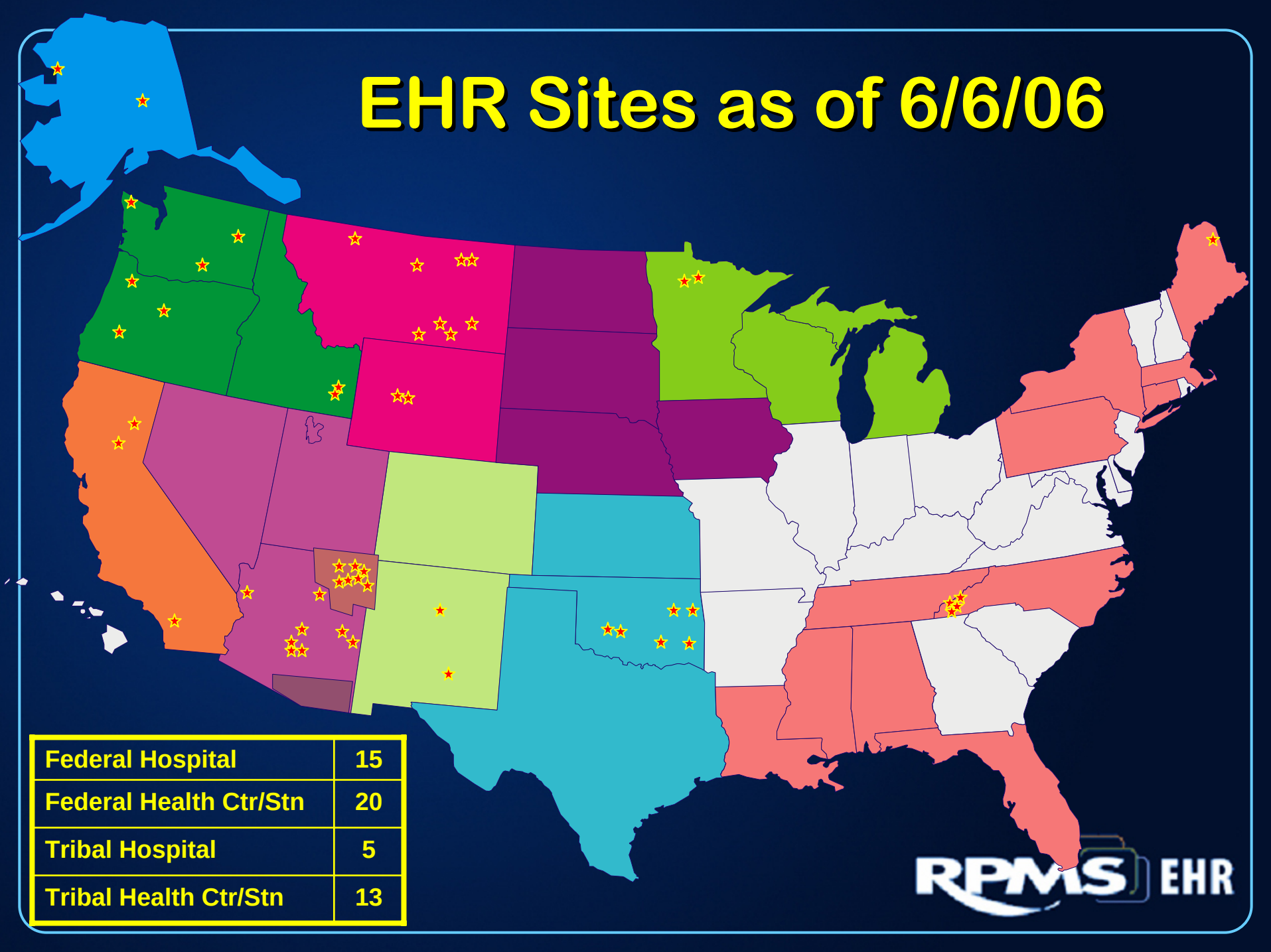

IHS·EHR
CHEROKEE INDIAN HOSPITAL
User Patient Tools Help
Patient Chart Communication RPMS CIHA Intranet Micromedex E-Mail
Demo,Patient
1 20-Mar-1947 (57) F
GENERAL 22-Feb-2005 13:48
LAMER,CHRISTOPHER CLAYTON
Primary Care Team Unassigned
Postings
CAD
Alerts
No Alerts Found
Reminders
No Reminders Found
Appointments/Visits
Appointment/Visit Date Status
Payne 12-Apr-2005 14...
Payne 29-Mar-2005 1... CANCELLED BY PATIENT
FARRELL FP-15 16-Mar-2005 1...
Payne 01-Mar-2005 1...
ULTRASOUND-2 25-Feb-2005 0... CANCELLED BY PATIENT
PT student 22-Feb-2005 1... CANCELLED BY CLINIC
CONTINUITY O... 22-Feb-2005 1... AMBULATORY
HYDE-G SAME ... 22-Feb-2005 1...
<PHYSICAL TH... 22-Feb-2005 0... AMBULATORY
<PHYSICAL TH... 22-Feb-2005 0... AMBULATORY
HYDE-G SAME ... 18-Feb-2005 1... CANCELLED BY CLINIC
HYDE-G SAME ... 18-Feb-2005 1... CANCELLED BY CLINIC
PT student 18-Feb-2005 1... CANCELLED BY CLINIC
<PHYSICAL TH... 18-Feb-2005 1... AMBULATORY
Crisis Alerts
Crisis Alert Date
ADVANCE DIRECTIVE 25-Jan-2005 13:47
CRISIS NOTE 06-Jul-2004 11:12
Problem List
Error Retrieving Problem List...
Lab Orders
Lab Order Status Date
HGB BLOOD S... COMPLETE 02-Feb-2005 10:52
URINE DIPSTIC... COMPLETE 14-Feb-2005 12:39
Adverse Reactions
Agent Reaction
ALLERGIC TO FLIES WEIGHT GAIN
ASPIRIN
BEE STINGS HIVES;ANXIETY
EASY OPEN CAPS EASY OPEN CAPS
EGGS RASH
FLIES
IODINE ANAPHYLAXIS
METOCLOPRAMIDE DROWSINESS
PEANUTS HIVES
PHENYLEPHRINE/PRO... muscle irritability
POLLEN EXTRACTS FRE... CHILLS
POVIDONE IODINE RASH
SILVER NITRATE DERMATITIS,CONTAC...
Notifications Cover Sheet Triage Wellness Notes Orders Medications Labs Prob/POV Services Reports D/C Summ Consults Privacy
LAMER,CHRISTOPHER CLAYTON
CHEROKEE-HO.NSH.IHS.GOV
CIHA HOSPITAL
Start
IHS·EHR
1:48 PM

EHR Milestones and Status

- RPMS EHR was certified January 2005
- 7 test sites participated in 2004
- Presently 53 facilities use EHR
- Goal for all Federal sites to be using EHR by end of 2008
- Tribal sites encouraged to use EHR as well

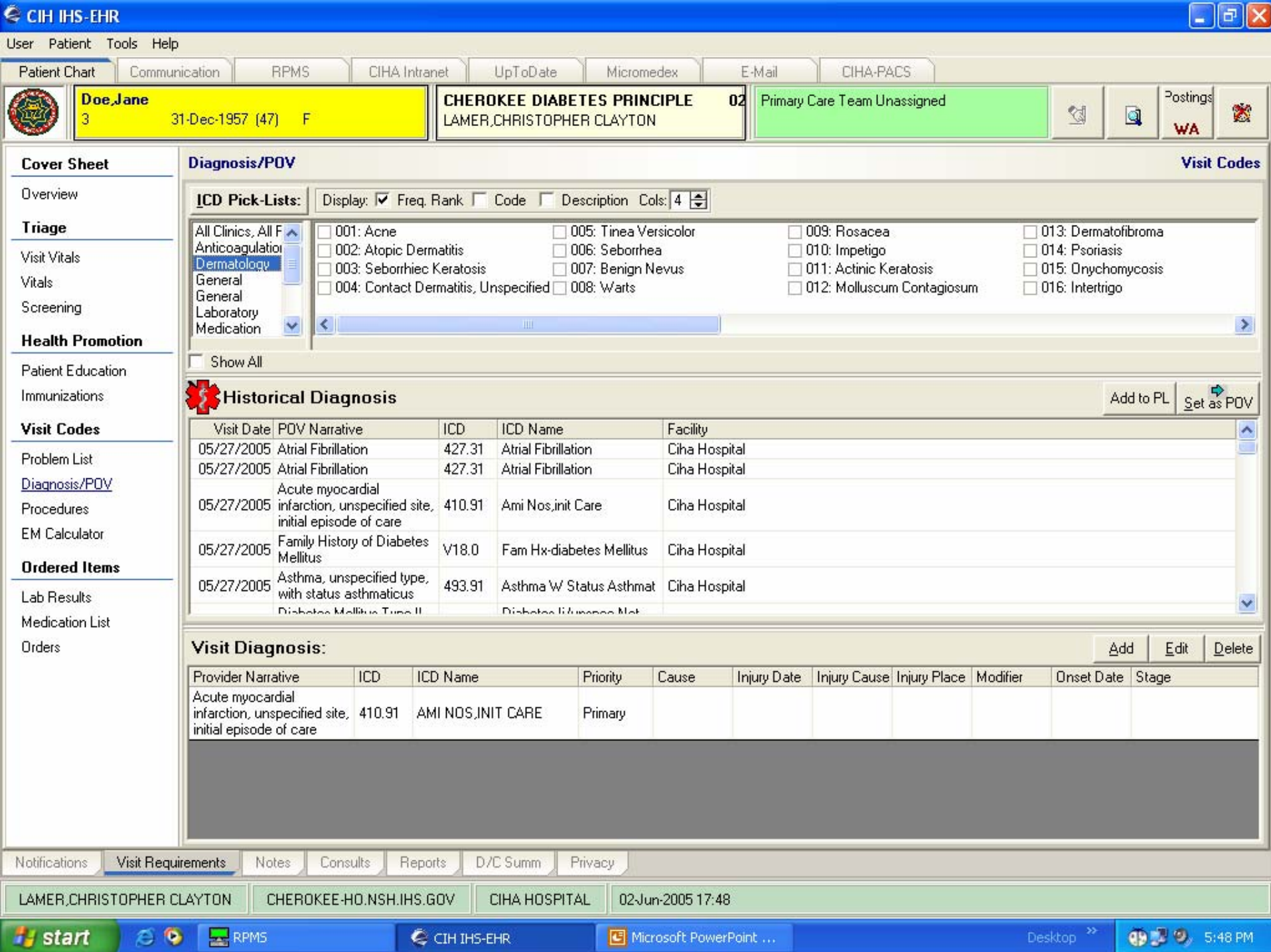
RPMS EHR

EHR Sites as of 6/6/06



Federal Hospital	15
Federal Health Ctr/Stn	20
Tribal Hospital	5
Tribal Health Ctr/Stn	13

RPMS EHR


CIH IHS-EHR
User Patient Tools Help
Patient Chart Communication RPMS CIHA Intranet UpToDate Micromedex E-Mail CIHA-PACS
Doe,Jane
3 31-Dec-1957 (47) F
CHEROKEE DIABETES PRINCIPLE 02
LAMER,CHRISTOPHER CLAYTON
Primary Care Team Unassigned
Postings
WA
Cover Sheet
Overview
Triage
Visit Vitals
Vitals
Screening
Health Promotion
Patient Education
Immunizations
Visit Codes
Problem List
Diagnosis/POV
Procedures
EM Calculator
Ordered Items
Lab Results
Medication List
Orders
Diagnosis/POV
Visit Codes
ICD Pick-Lists:
Display: Freq. Rank Code Description Cols: 4
All Clinics, All F
Anticoagulatio
Dermatology
General
General
Laboratory
Medication
001: Acne
002: Atopic Dermatitis
003: Seborrhiec Keratosis
004: Contact Dermatitis, Unspecified
005: Tinea Versicolor
006: Seborrhea
007: Benign Nevus
008: Warts
009: Rosacea
010: Impetigo
011: Actinic Keratosis
012: Molluscum Contagiosum
013: Dermatofibroma
014: Psoriasis
015: Onychomycosis
016: Intertrigo
Show All
Historical Diagnosis
Add to PL
Set as POV
Visit Date | POV Narrative | ICD | ICD Name | Facility
05/27/2005 | Atrial Fibrillation | 427.31 | Atrial Fibrillation | Ciha Hospital
05/27/2005 | Atrial Fibrillation | 427.31 | Atrial Fibrillation | Ciha Hospital
05/27/2005 | Acute myocardial infarction, unspecified site, initial episode of care | 410.91 | Ami Nos,init Care | Ciha Hospital
05/27/2005 | Family History of Diabetes Mellitus | V18.0 | Fam Hx-diabetes Mellitus | Ciha Hospital
05/27/2005 | Asthma, unspecified type, with status asthmaticus | 493.91 | Asthma W Status Asthmat | Ciha Hospital
Visit Diagnosis:
Add
Edit
Delete
Provider Narrative | ICD | ICD Name | Priority | Cause | Injury Date | Injury Cause | Injury Place | Modifier | Onset Date | Stage
Acute myocardial infarction, unspecified site, initial episode of care | 410.91 | AMI NOS,INIT CARE | Primary
Notifications Visit Requirements Notes Consults Reports D/C Summ Privacy
LAMER,CHRISTOPHER CLAYTON
CHEROKEE-HO.NSH.IHS.GOV
CIHA HOSPITAL
02-Jun-2005 17:48
start
RPMS
CIH IHS-EHR
Microsoft PowerPoint ...
Desktop
5:48 PM

How Can EHR Improve Care?

- Access to Information
  - Immediately available, no data entry delay
  - Service Unit wide, even satellite clinics
  - Legible
- Computerized Order Entry
  - **Much** less chance for error
  - Order checks for allergies and interactions
  - Complete, up to date medication lists
- Reminders, Notifications, and Alerts
  - Abnormal lab results
  - Screening and interventions that are due

RPMS EHR

Impact of EHR - Metrics

- Provider Productivity
- Patient Care (GPRA/CRS)
- Billing & Collections

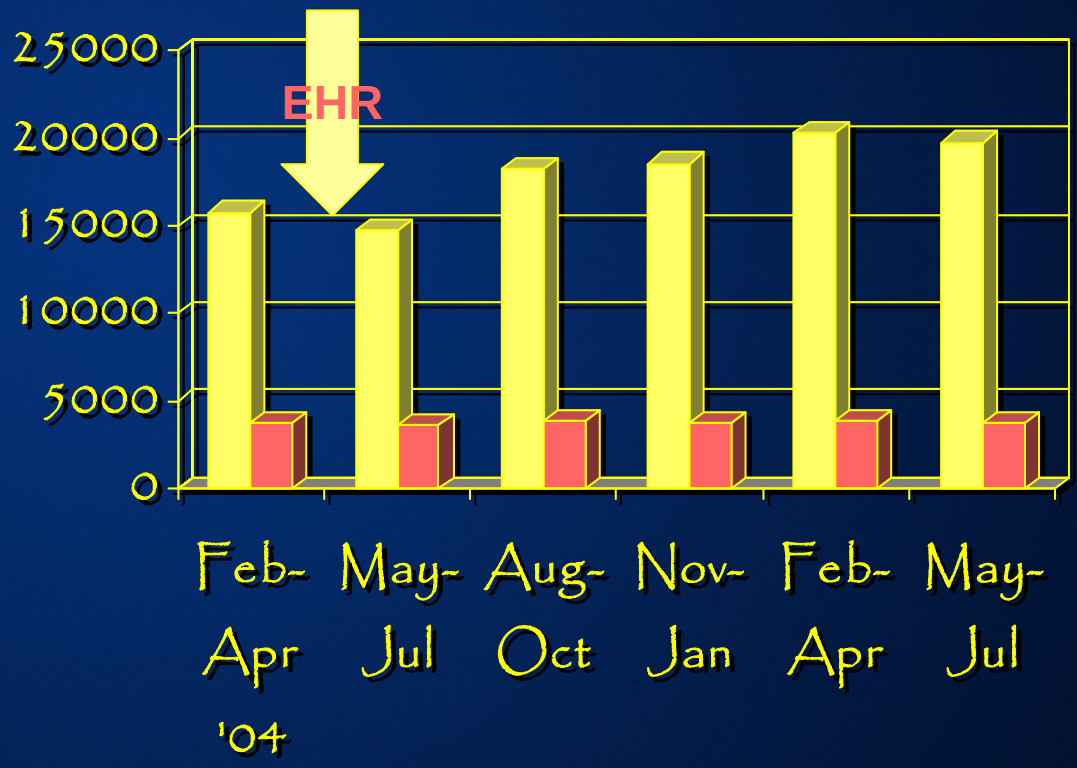
RPMS EHR

Provider Productivity

- All sites see a transient decrease in provider productivity (pts/day) at first
- Typically takes 1-3 months to recover to pre-EHR levels
- Mitigate by staggering implementation, either by provider or by function, or both
- Efficiencies in other areas (phone calls, chart reviews) can improve productivity

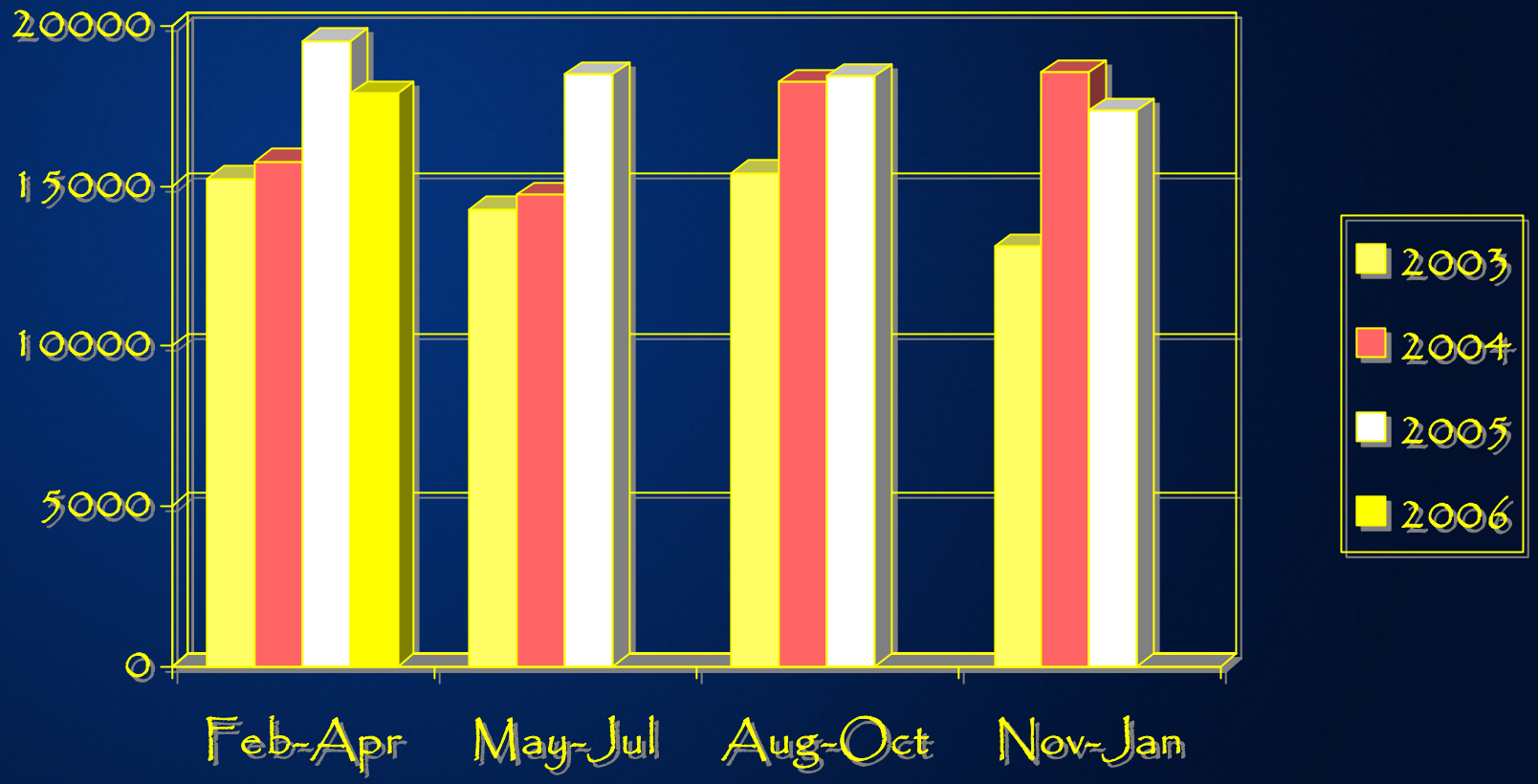
RPMS EHR

Clinic Visits (Site A)



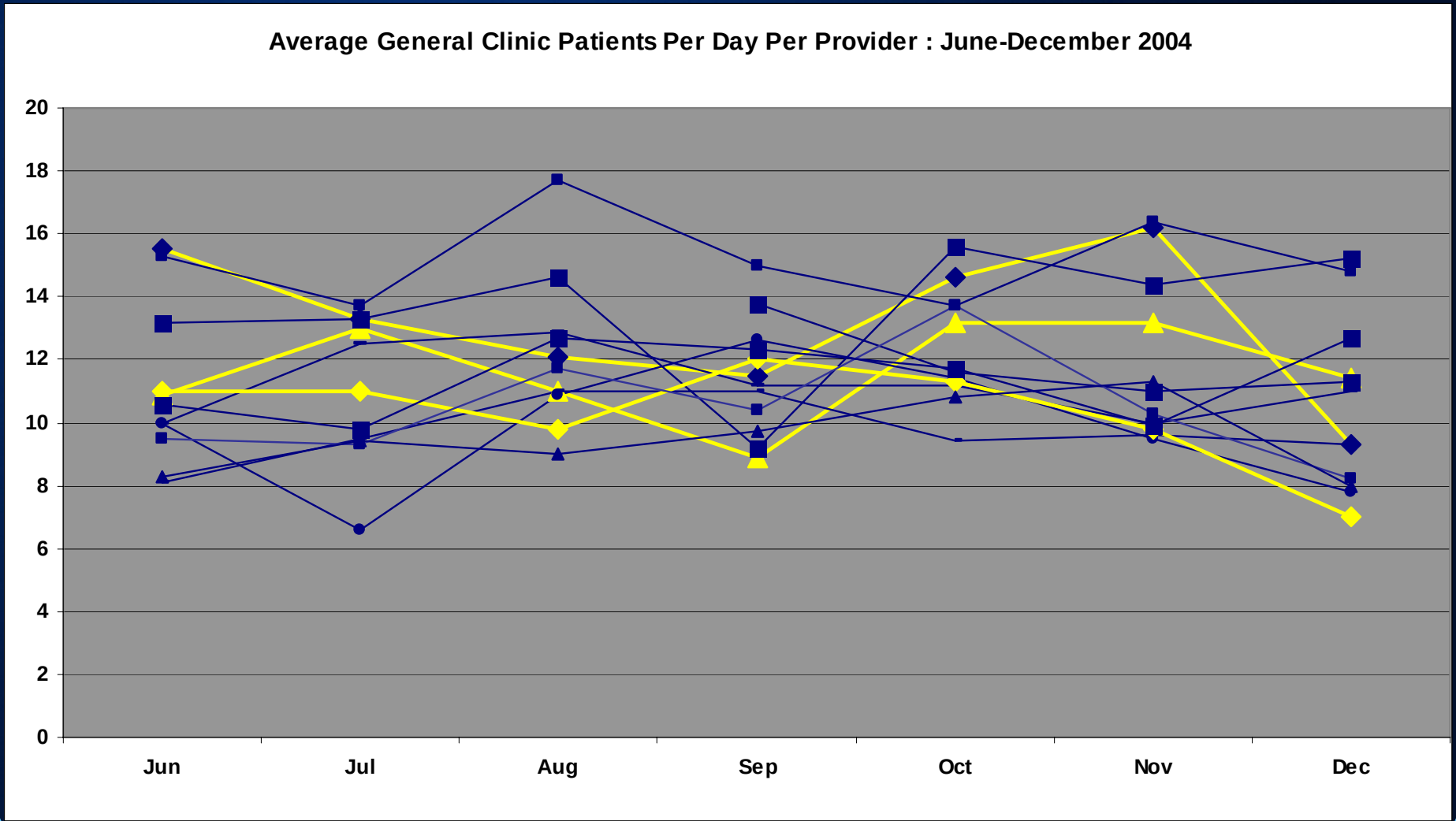
RPMS EHR

Quarterly Visit Comparison (Site A)



RPMS EHR

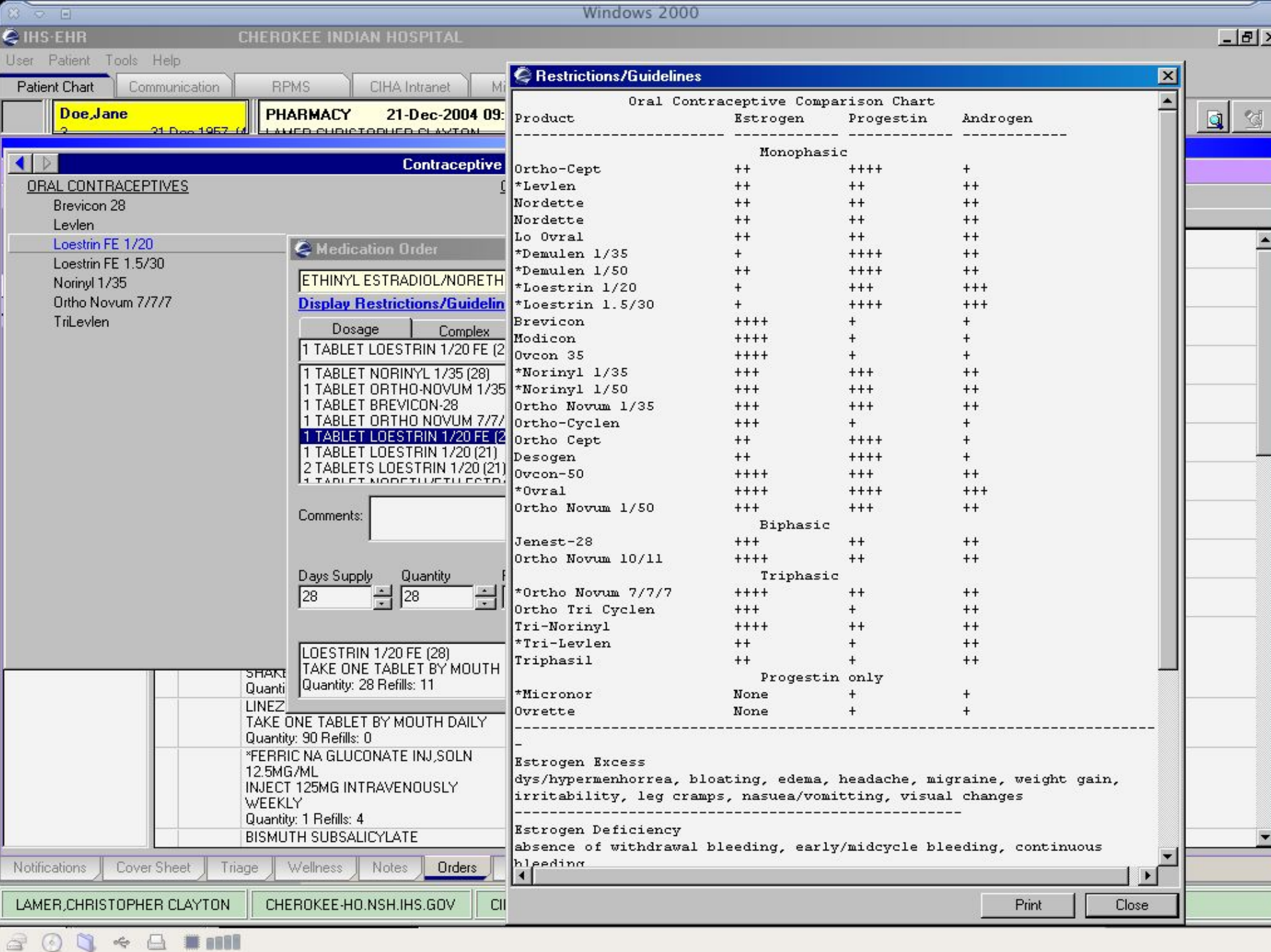
Site C Productivity



Site E Comments

- Urgent care clinic (2000-2500 visits/mo)
  - 1st provider 3/05
  - Added provider every 3-4 weeks (7 total)
  - Productivity drop 5-15 days only
  - Chart pull rate now 4% (patients coming from ER)
  - 2 chart runner positions dropped ($60K)

RPMS EHR



Restrictions/Guidelines

Oral Contraceptive Comparison Chart

Product	Estrogen	Progestin	Androgen
	Monophasic		
Ortho-Cept	++	++++	+
*Levlen	++	++	++
Nordette	++	++	++
Nordette	++	++	++
Lo Ovral	++	++	++
*Demulen 1/35	+	++++	++
*Demulen 1/50	++	++++	++
*Loestrin 1/20	+	+++	+++
*Loestrin 1.5/30	+	++++	+++
Brevicon	++++	+	+
Modicon	++++	+	+
Ovcon 35	++++	+	+
*Norinyl 1/35	+++	+++	++
*Norinyl 1/50	+++	+++	++
Ortho Novum 1/35	+++	+++	++
Ortho-Cyclen	+++	+	+
Ortho Cept	++	++++	+
Desogen	++	++++	+
Ovcon-50	++++	+++	++
*Ovral	++++	++++	+++
Ortho Novum 1/50	+++	+++	++
	Biphasic		
Jenest-28	+++	++	++
Ortho Novum 10/11	++++	++	++
	Triphasic		
*Ortho Novum 7/7/7	++++	++	++
Ortho Tri Cyclen	+++	+	++
Tri-Norinyl	++++	++	++
*Tri-Levlen	++	+	++
Triphasil	++	+	++
	Progestin only		
*Micronor	None	+	+
Ovrette	None	+	+

Estrogen Excess
dys/hypermenhorrea, bloating, edema, headache, migraine, weight gain, irritability, leg cramps, nasuea/vomitting, visual changes

Estrogen Deficiency
absence of withdrawal bleeding, early/midcycle bleeding, continuous bleeding

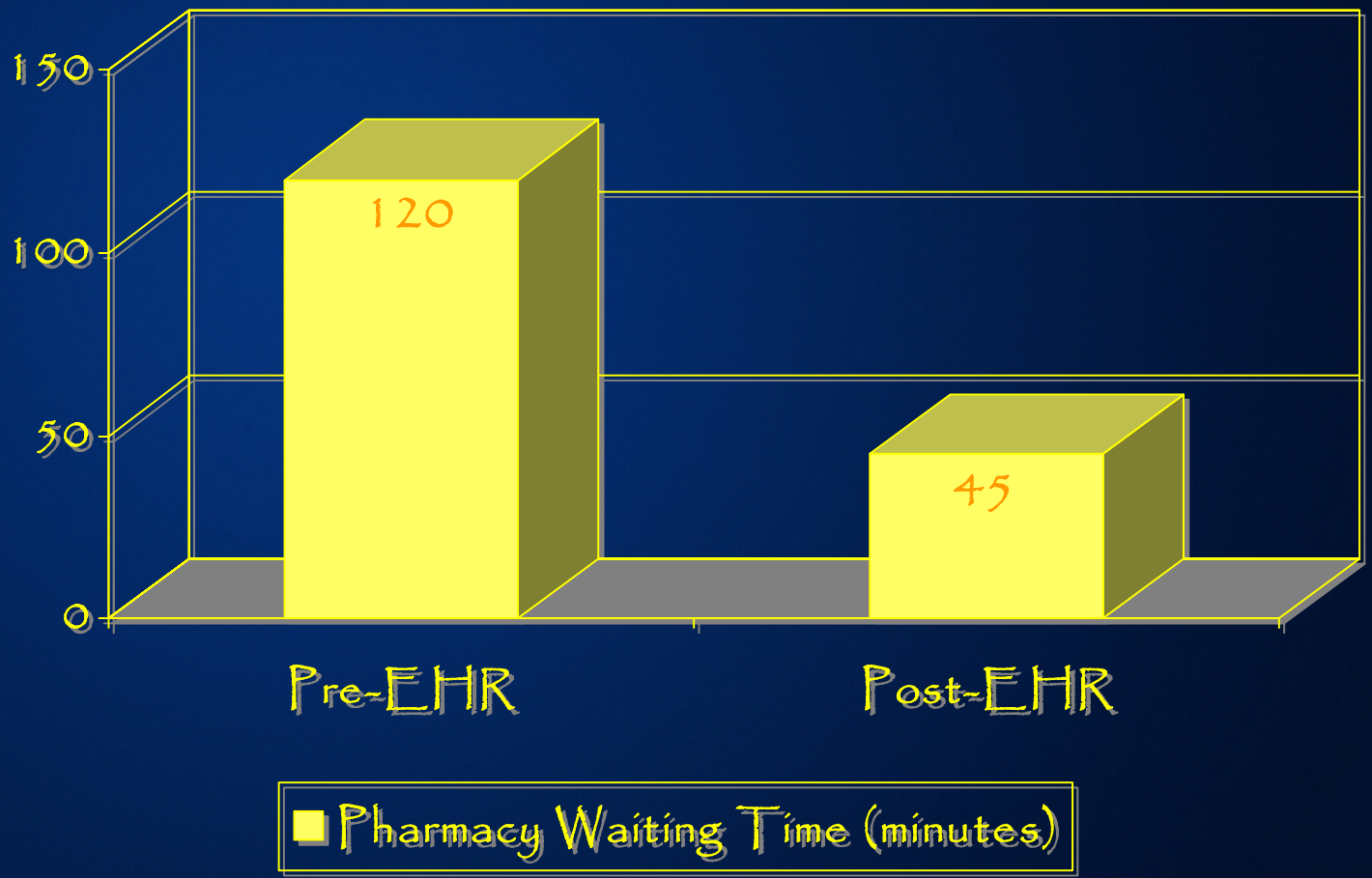
Print Close

Patient Care Metrics

- Principal reason for EHR – improve patient care
- How do we know we have done that?
- Sites should be identifying important metrics and tracking them
- Ready-made patient care metrics: CRS
- EHR can provide the tools for quality improvement but an active QI program is a must

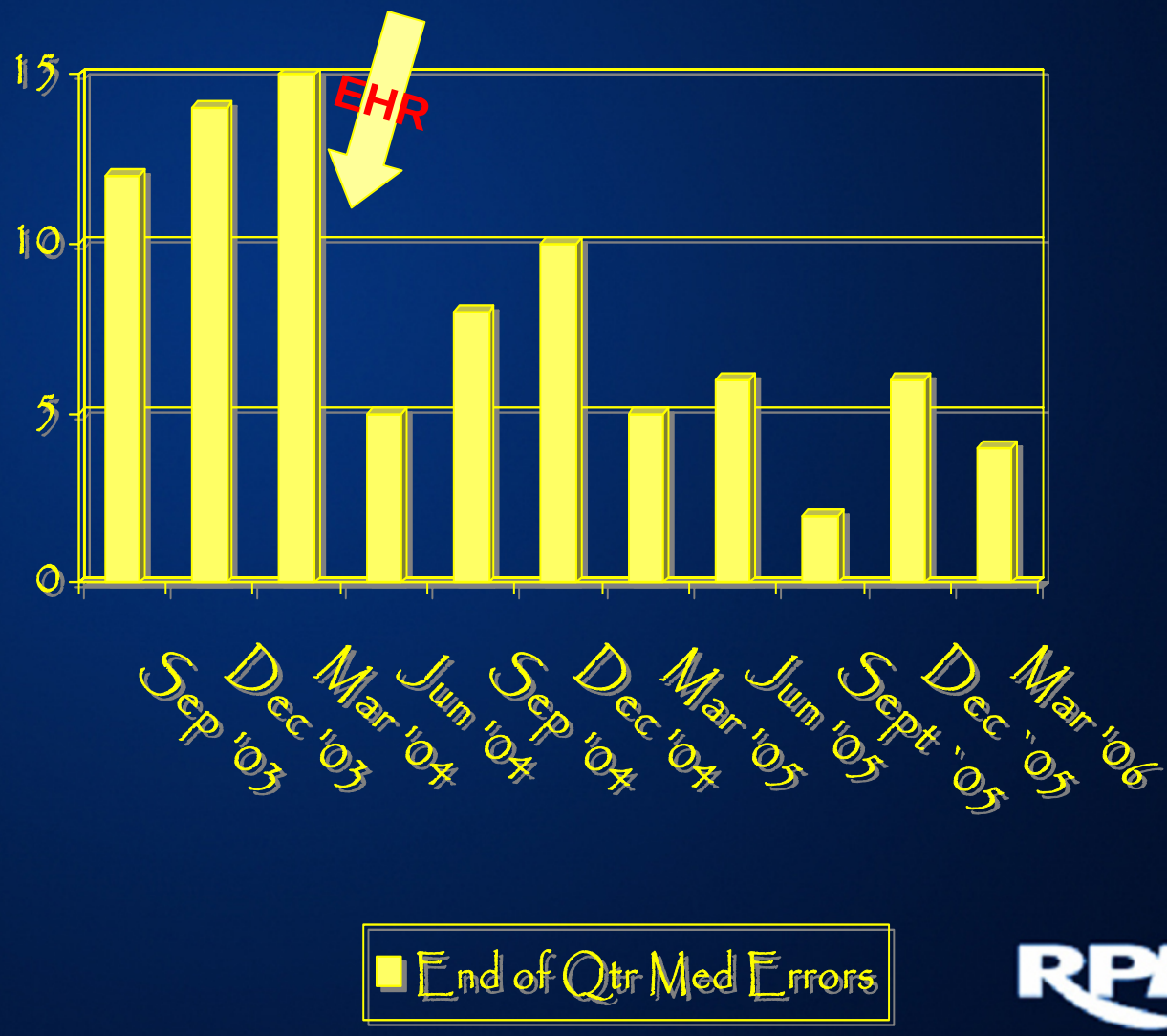
RPMS EHR

Pharmacy Waiting (Site D)



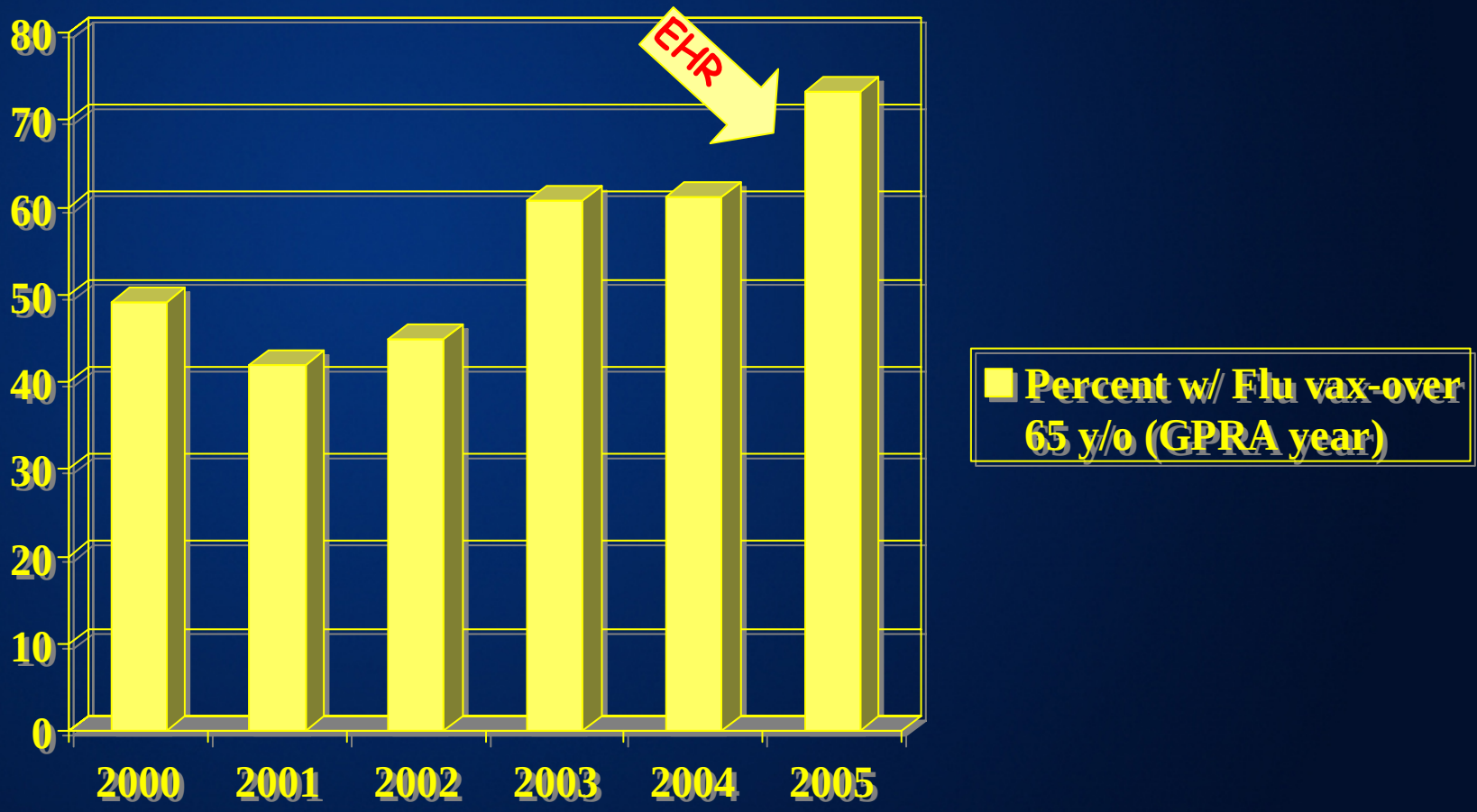
RPMS EHR

Medication Errors (Site A)



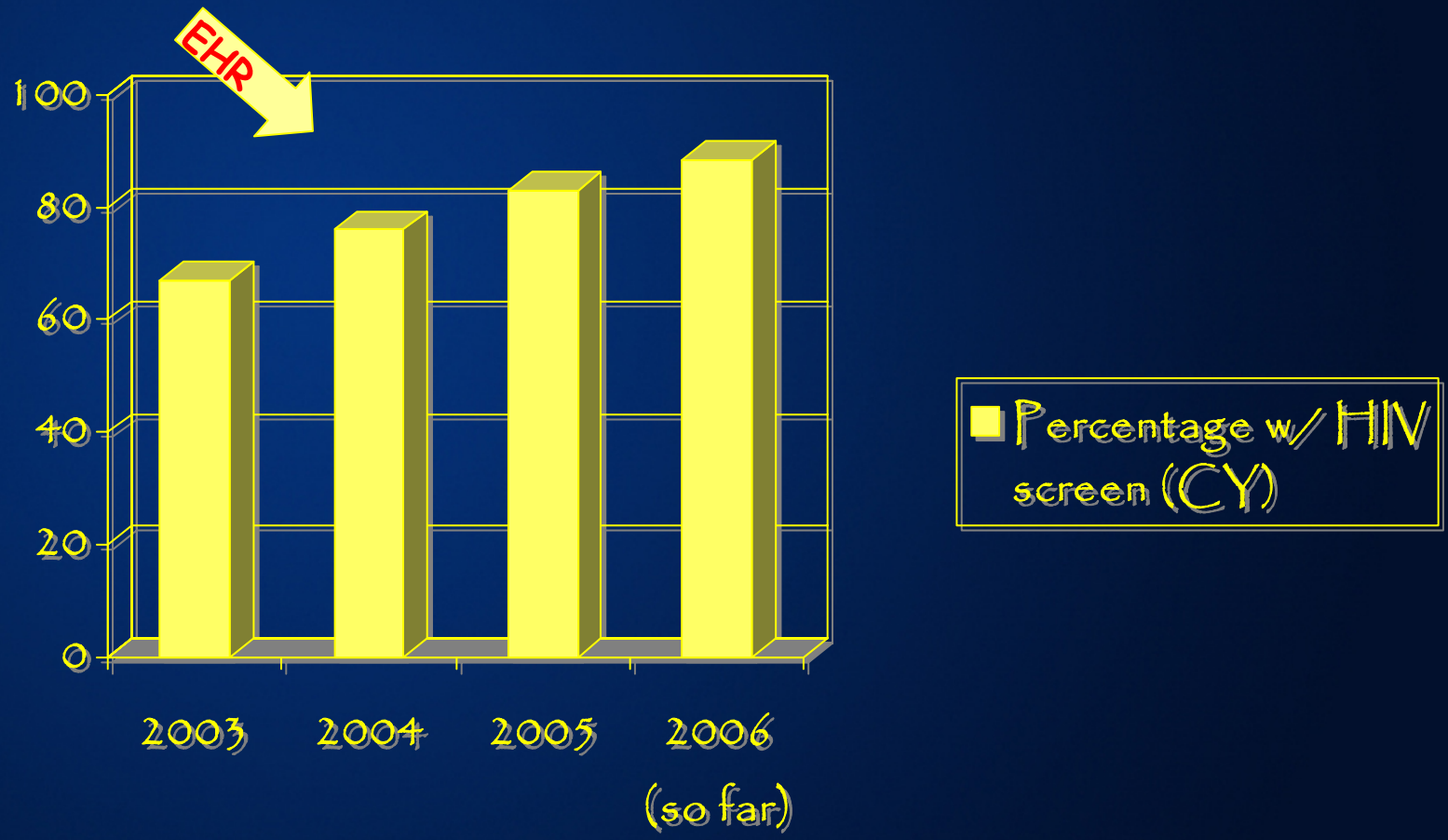
RPMS EHR

GPRA Indicator - Flu Vaccine 65+ (Site A)



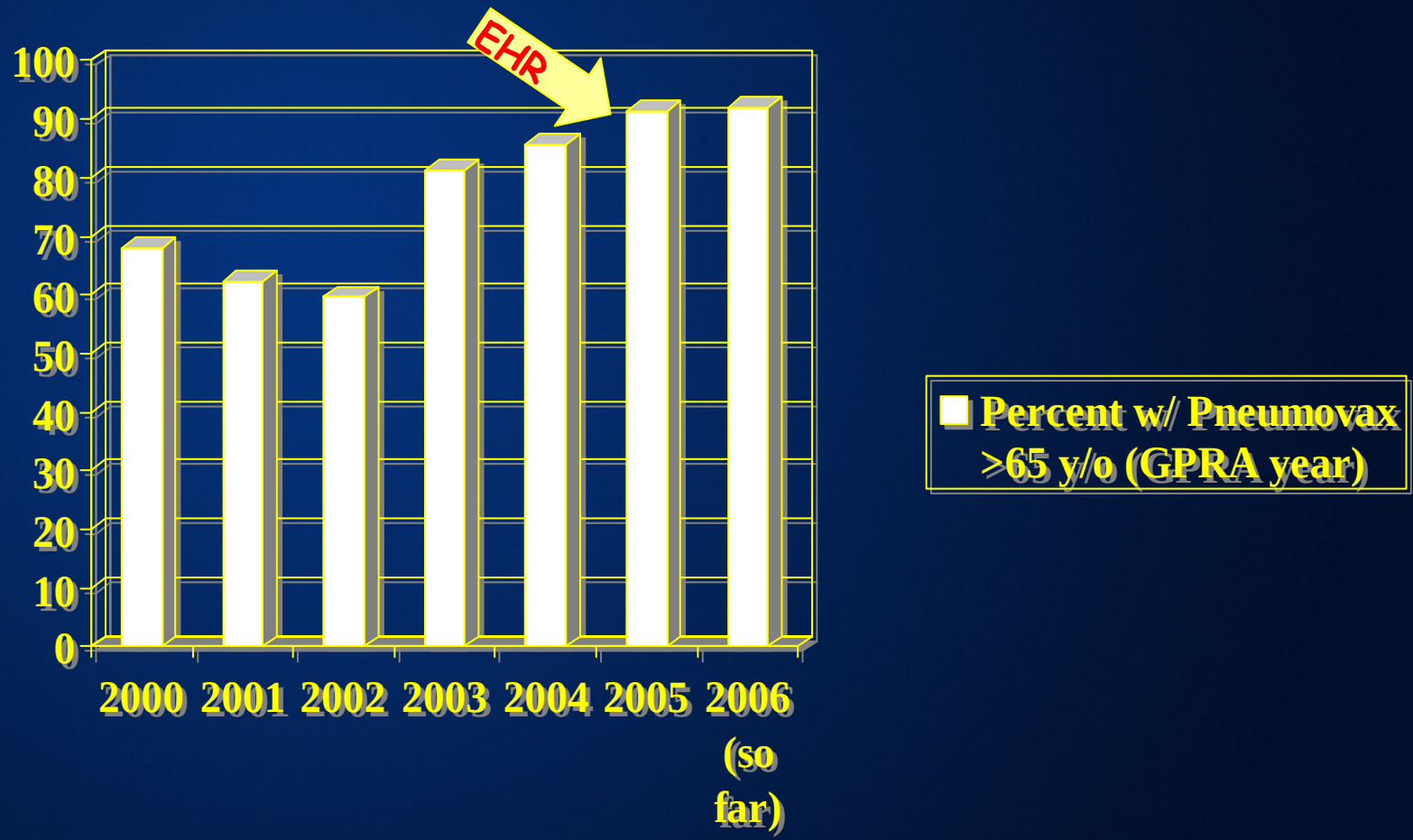
RPMS EHR

GPRA Indicator – Prenatal HIV (Site A)



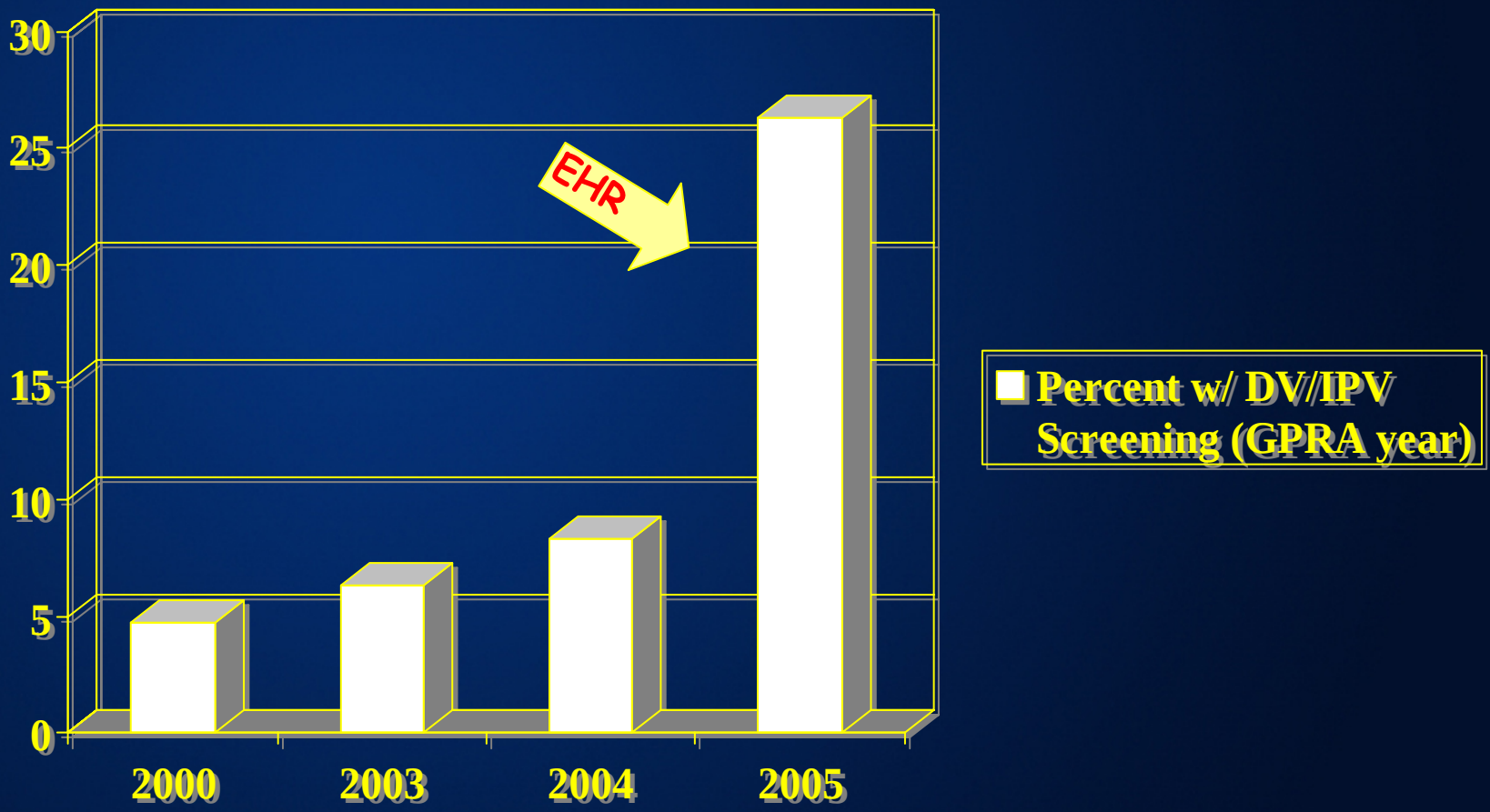
RPMS EHR

GPRA Indicator – Pneumovax over 65 y/o (Site A)



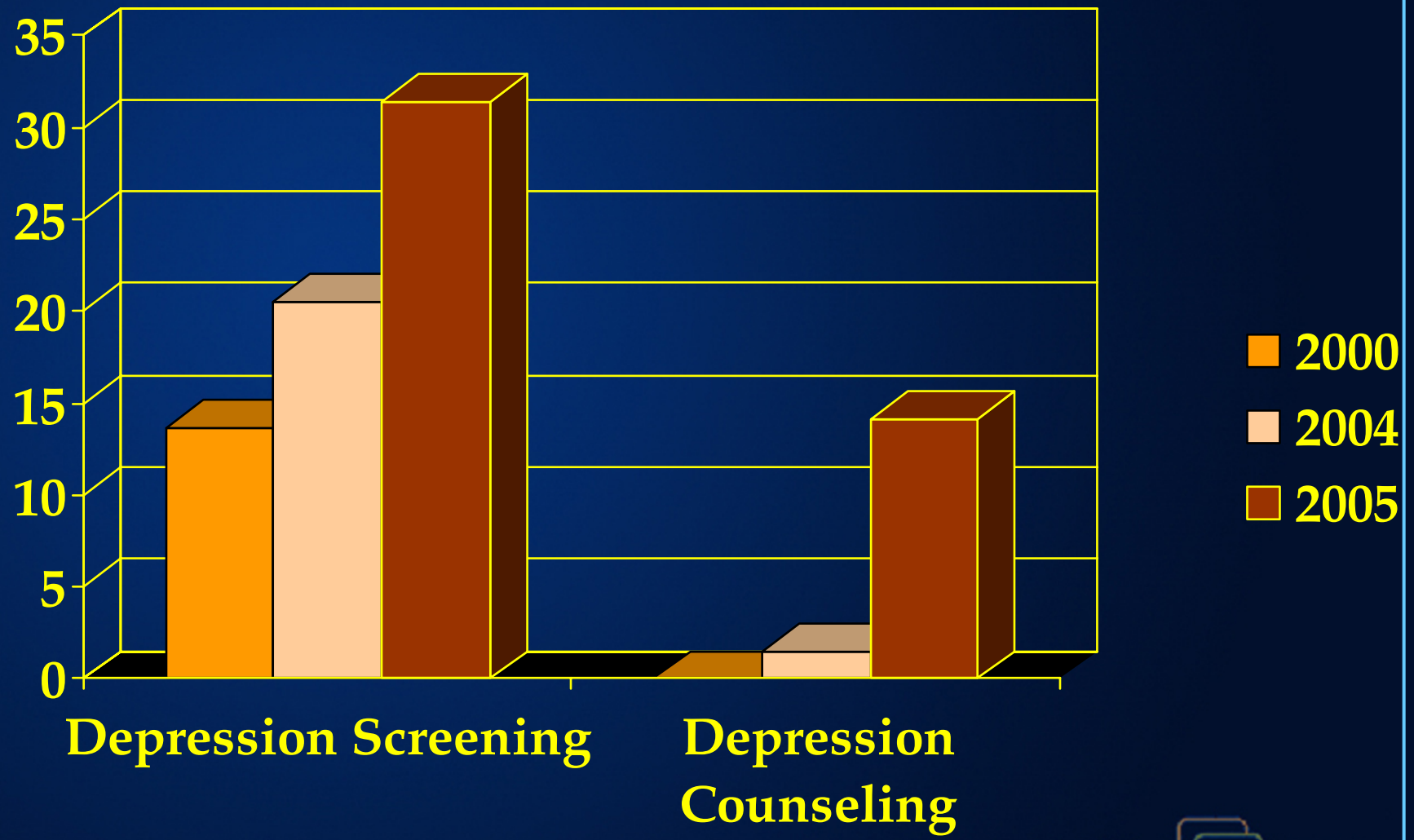
RPMS EHR

GPRA Indicator –
DV Screen Age 15-40 (Site A)



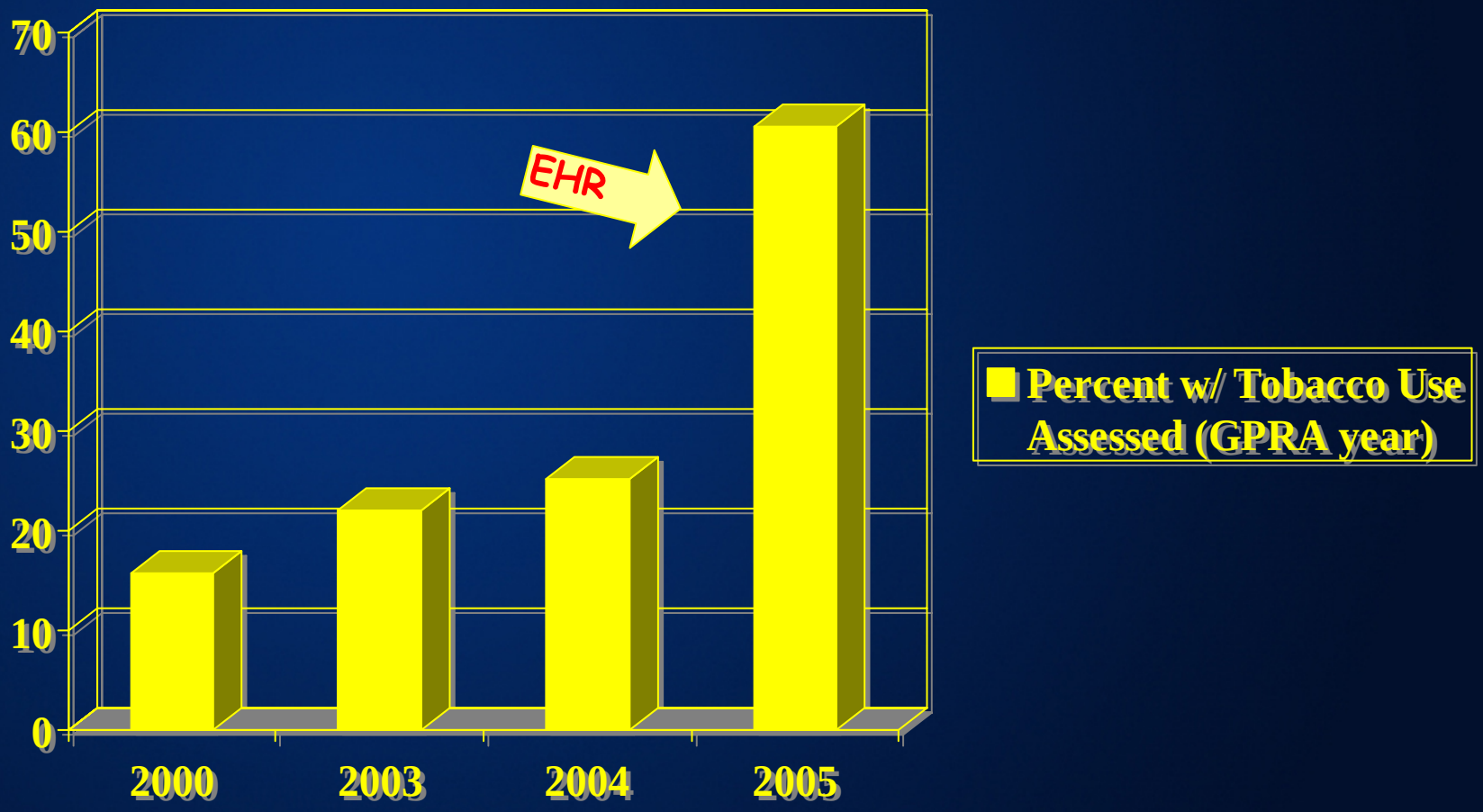
RPMS EHR

Depression Screening (Site A)



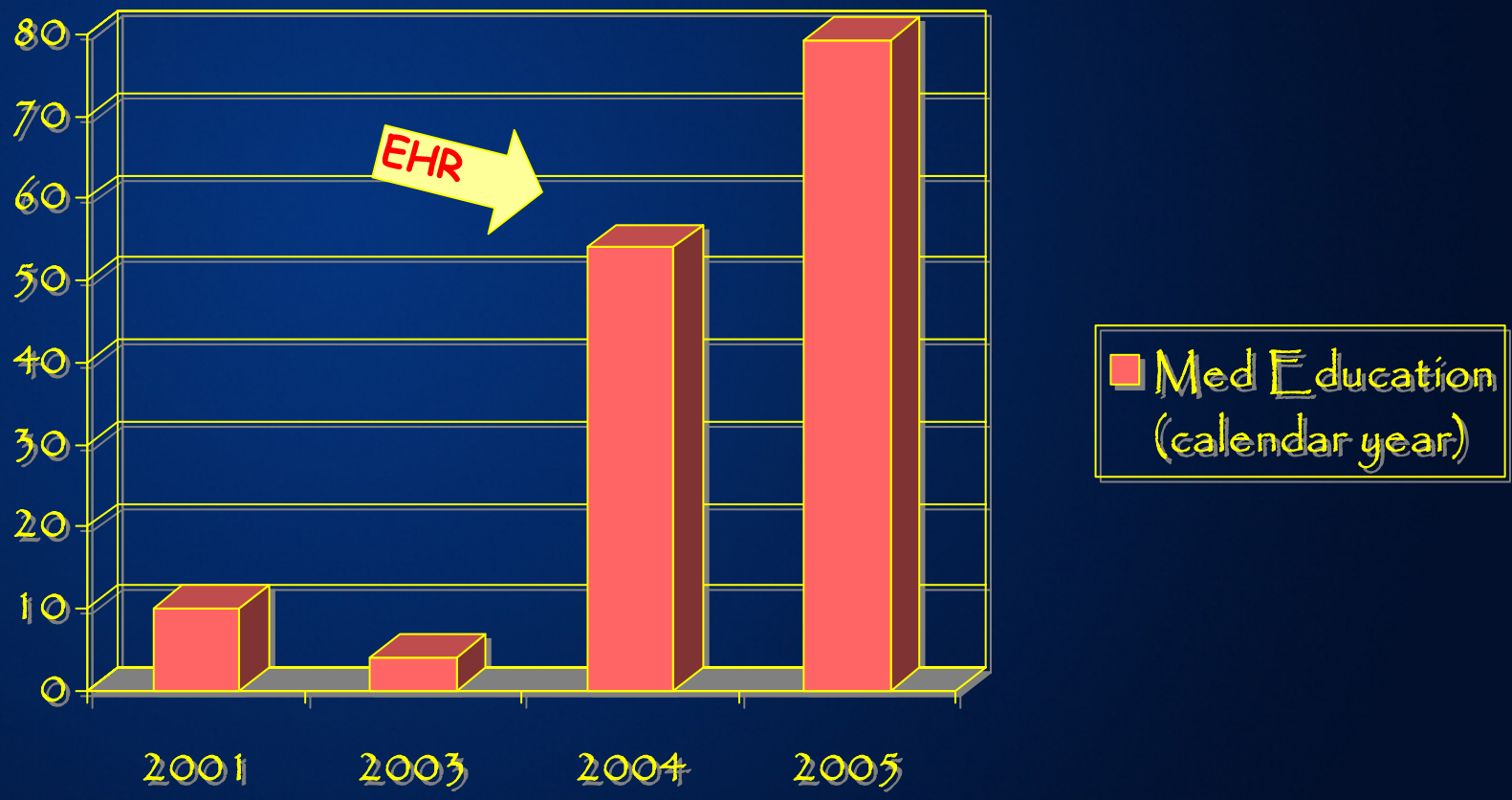
RPMS EHR

GPRA Indicator – Tobacco Assessment (Site A)



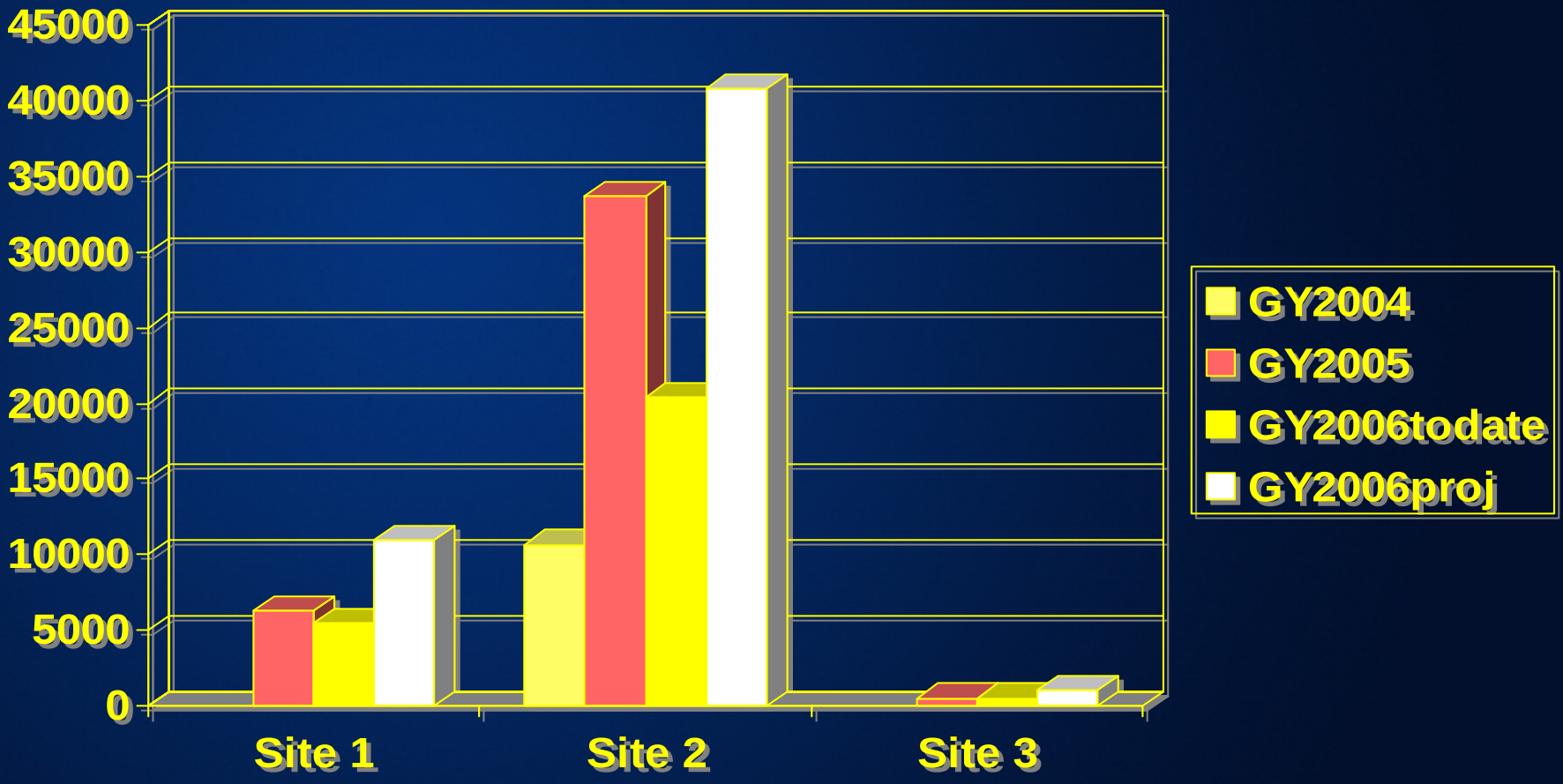
RPMS EHR

GPRA Indicator – Medication Education (Site A)



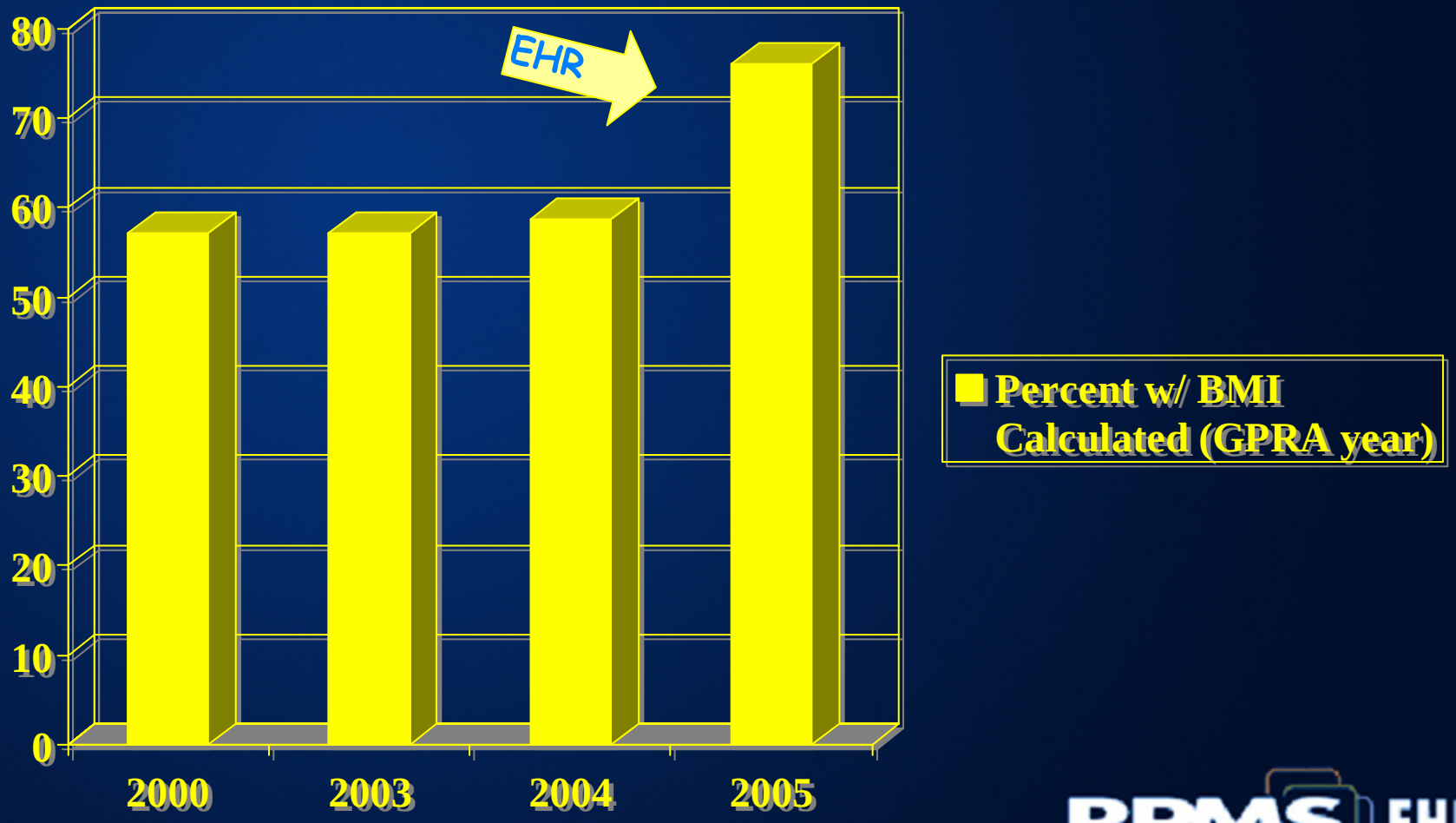
RPMS EHR

Patient Education – 3 EHR Sites



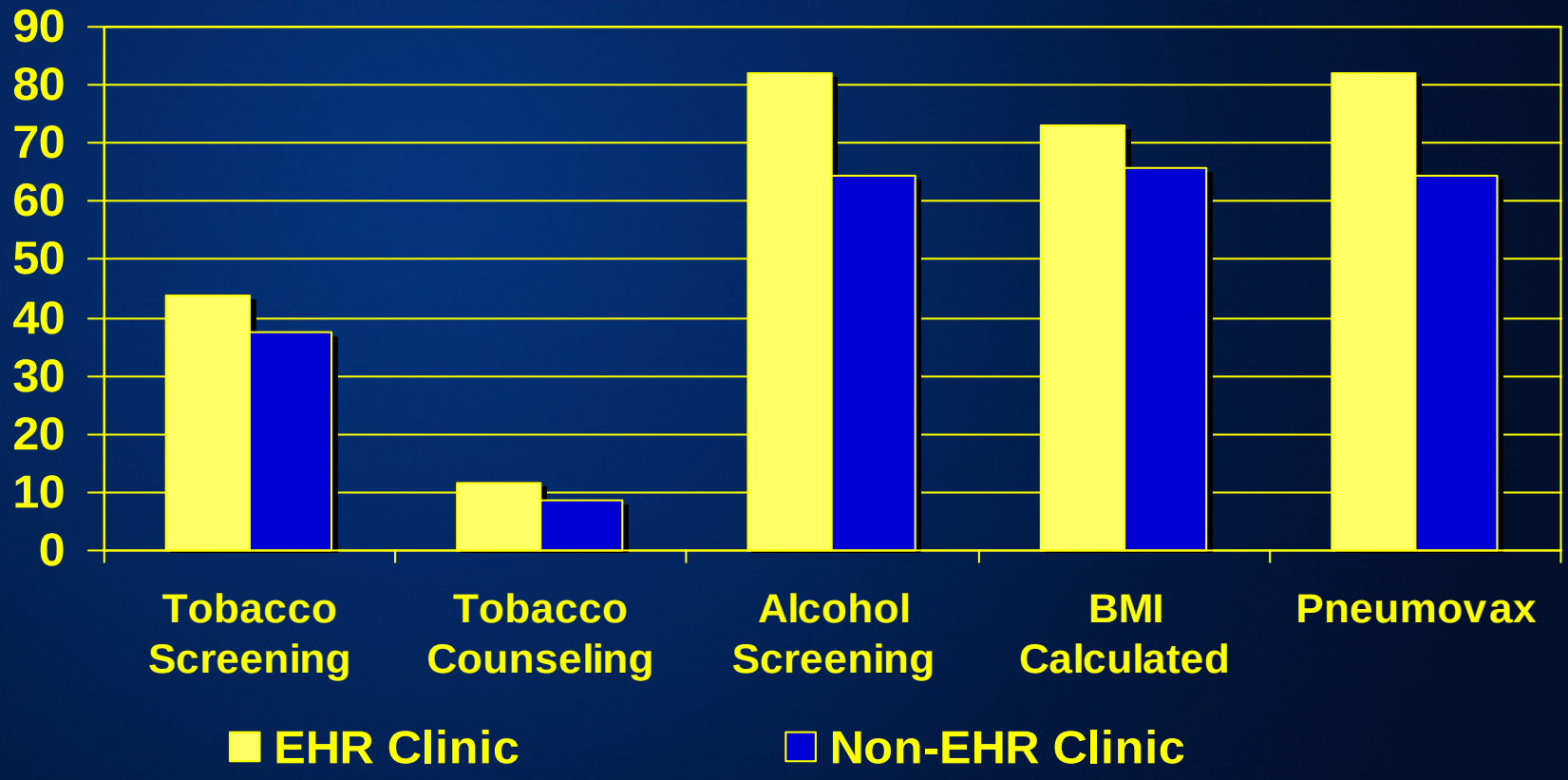
RPMS EHR

GPRA Indicator – BMI 2-74 y/o (Site A)

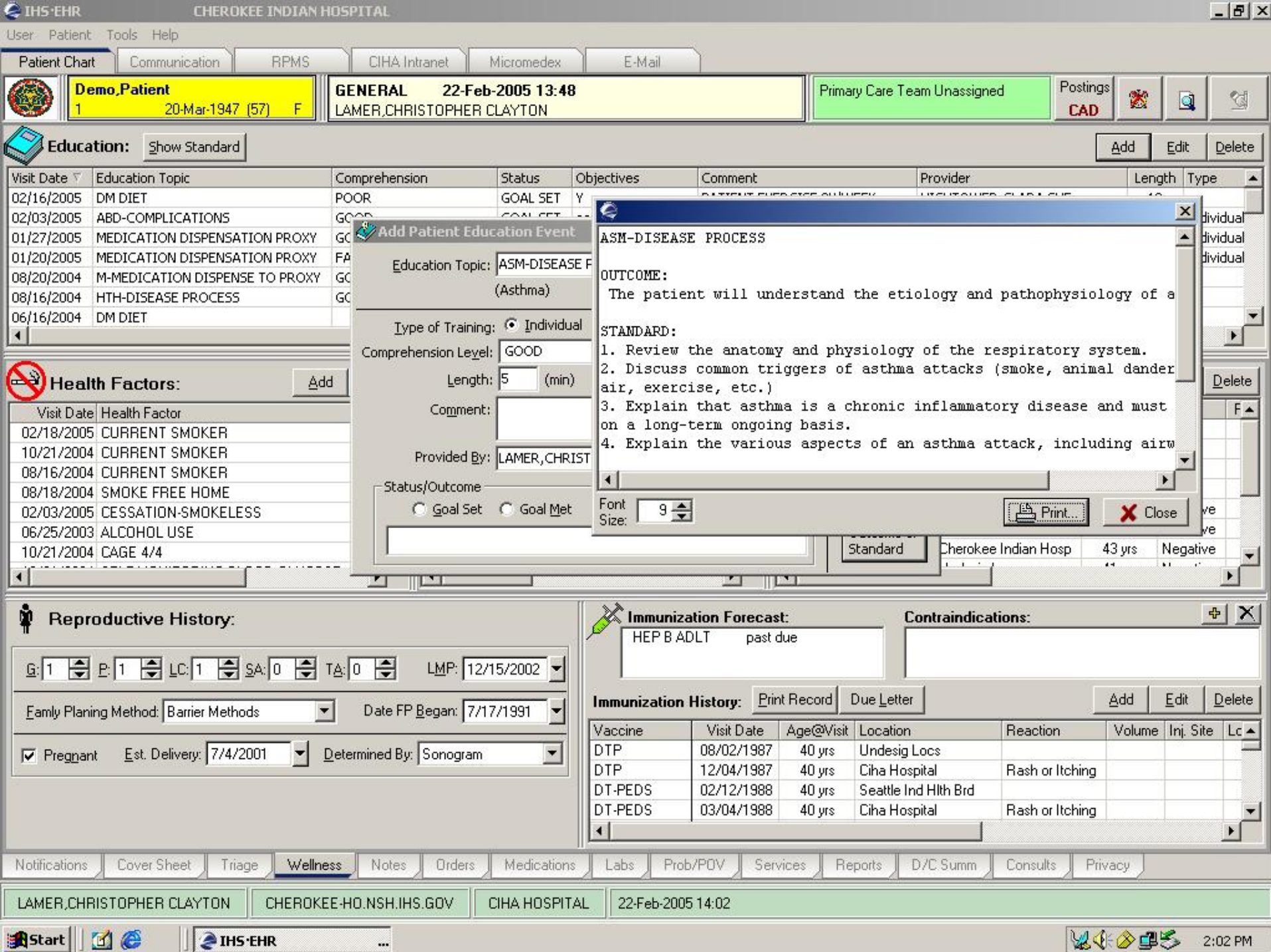


RPMS EHR

GPRA Indicators – 1st Qtr '05 (Site C)



RPMS EHR

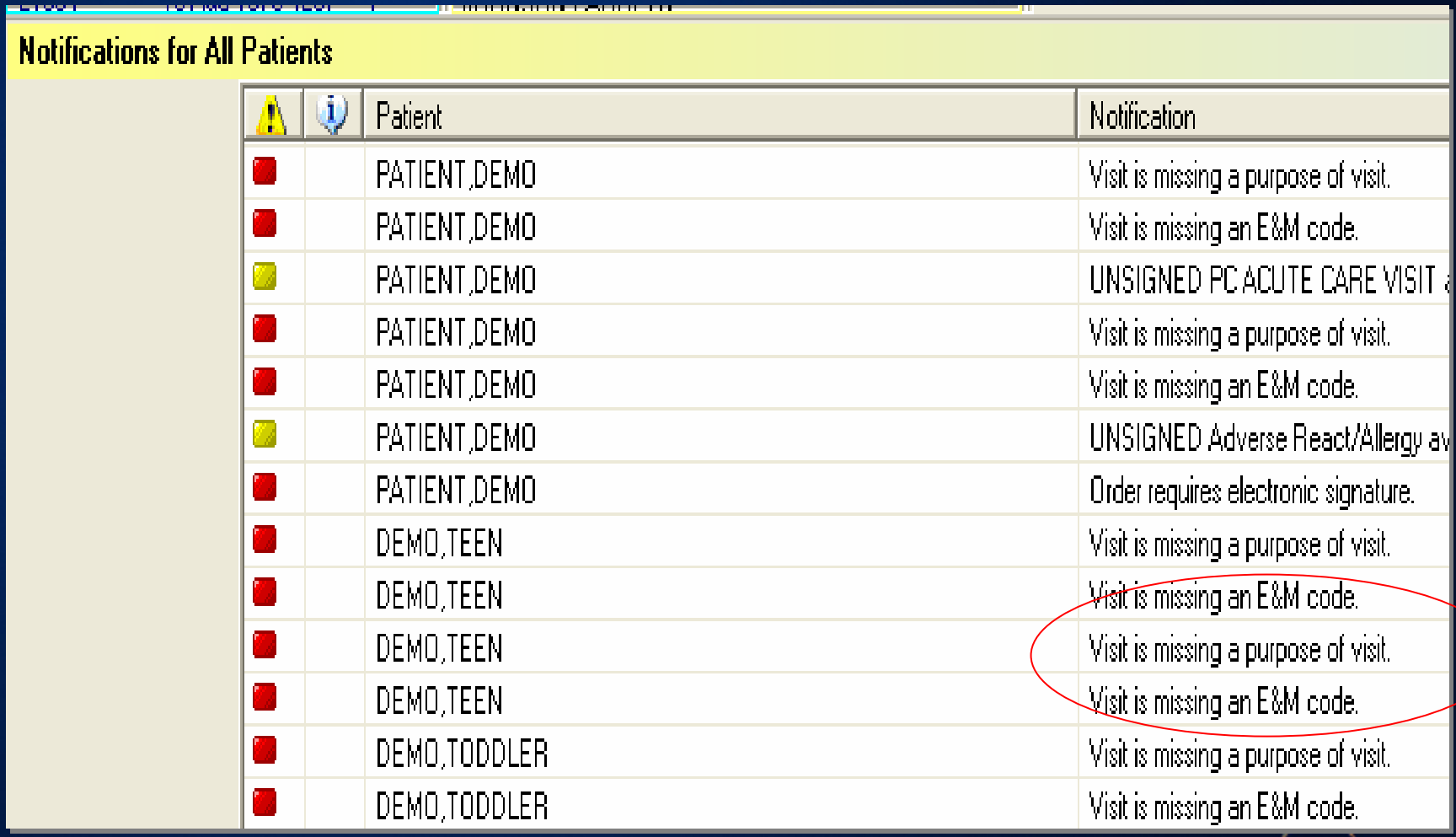

IHS·EHR
CHEROKEE INDIAN HOSPITAL
User Patient Tools Help
Patient Chart Communication RPMS CIHA Intranet Micromedex E-Mail
Demo,Patient
1 20-Mar-1947 (57) F
GENERAL 22-Feb-2005 13:48
LAMER,CHRISTOPHER CLAYTON
Primary Care Team Unassigned
Postings
CAD
Education:
Show Standard
Add Edit Delete
Visit Date | Education Topic | Comprehension | Status | Objectives | Comment | Provider | Length | Type
02/16/2005 DM DIET POOR GOAL SET Y
02/03/2005 ABD-COMPLICATIONS
01/27/2005 MEDICATION DISPENSATION PROXY
01/20/2005 MEDICATION DISPENSATION PROXY
08/20/2004 M-MEDICATION DISPENSE TO PROXY
08/16/2004 HTH-DISEASE PROCESS
06/16/2004 DM DIET
Add Patient Education Event
Education Topic: ASM-DISEASE F
(Asthma)
Type of Training: Individual
Comprehension Level: GOOD
Length: 5 (min)
Comment:
Provided By: LAMER,CHRIST
Status/Outcome
Goal Set Goal Met
ASM-DISEASE PROCESS
OUTCOME:
The patient will understand the etiology and pathophysiology of a
STANDARD:
1. Review the anatomy and physiology of the respiratory system.
2. Discuss common triggers of asthma attacks (smoke, animal dander
air, exercise, etc.)
3. Explain that asthma is a chronic inflammatory disease and must
on a long-term ongoing basis.
4. Explain the various aspects of an asthma attack, including airw
Font Size: 9
Print...
Close
Health Factors:
Add
Delete
Visit Date | Health Factor
02/18/2005 CURRENT SMOKER
10/21/2004 CURRENT SMOKER
08/16/2004 CURRENT SMOKER
08/18/2004 SMOKE FREE HOME
02/03/2005 CESSATION-SMOKELESS
06/25/2003 ALCOHOL USE
10/21/2004 CAGE 4/4
Standard
Cherokee Indian Hosp
43 yrs
Negative
Reproductive History:
G: 1 P: 1 LC: 1 SA: 0 TA: 0 LMP: 12/15/2002
Family Planing Method: Barrier Methods
Date FP Began: 7/17/1991
Pregnant
Est. Delivery: 7/4/2001
Determined By: Sonogram
Immunization Forecast:
HEP B ADLT past due
Contraindications:
Immunization History:
Print Record
Due Letter
Add Edit Delete
Vaccine | Visit Date | Age@Visit | Location | Reaction | Volume | Inj. Site
DTP 08/02/1987 40 yrs Undesig Locs
DTP 12/04/1987 40 yrs Ciha Hospital Rash or Itching
DT-PEDS 02/12/1988 40 yrs Seattle Ind Hlth Brd
DT-PEDS 03/04/1988 40 yrs Ciha Hospital Rash or Itching
Notifications Cover Sheet Triage Wellness Notes Orders Medications Labs Prob/POV Services Reports D/C Summ Consults Privacy
LAMER,CHRISTOPHER CLAYTON
CHEROKEE-HO.NSH.IHS.GOV
CIHA HOSPITAL
22-Feb-2005 14:02
Start
IHS·EHR
2:02 PM

EHR Creates the Potential to Improve Collections:

- More complete documentation with templates
- Provider notifications for forgotten POVs or codes
- Superbills, ICD/CPT Pick Lists – easier to find correct codes
- Coding Tools and Training with EHR

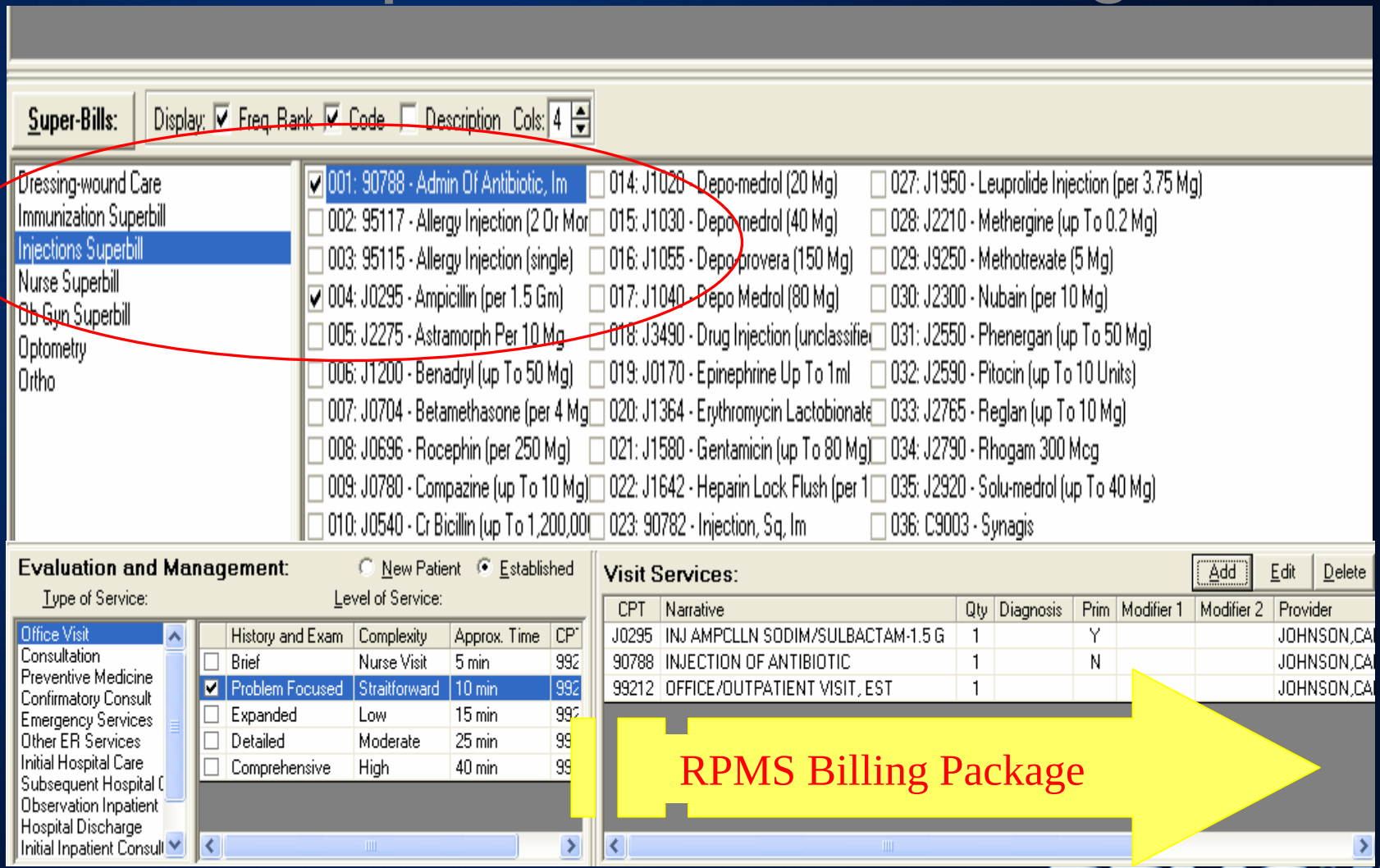
RPMS EHR

Automatic Notifications



RPMS EHR

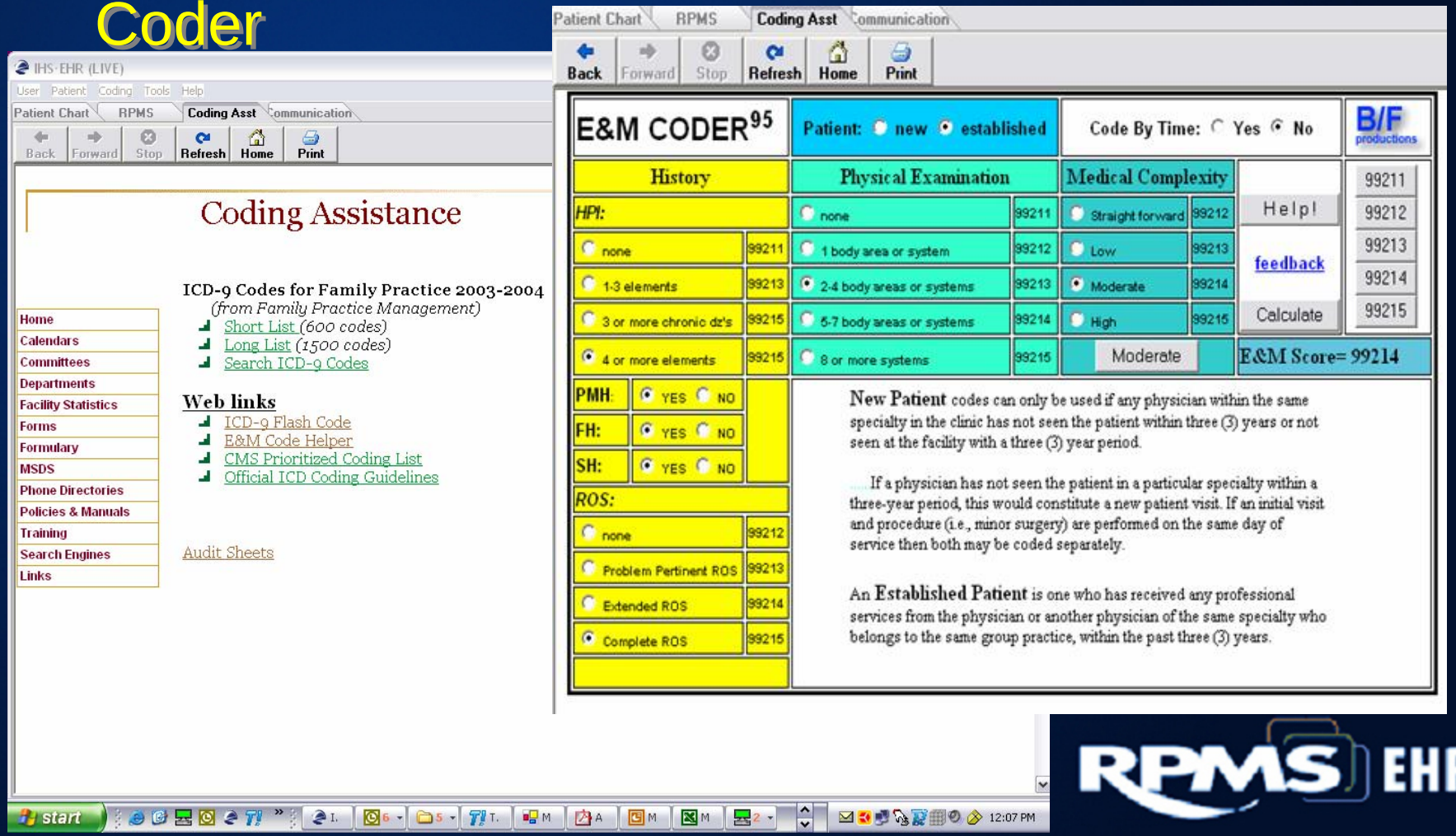
Superbill link to Billing



RPMS EHR

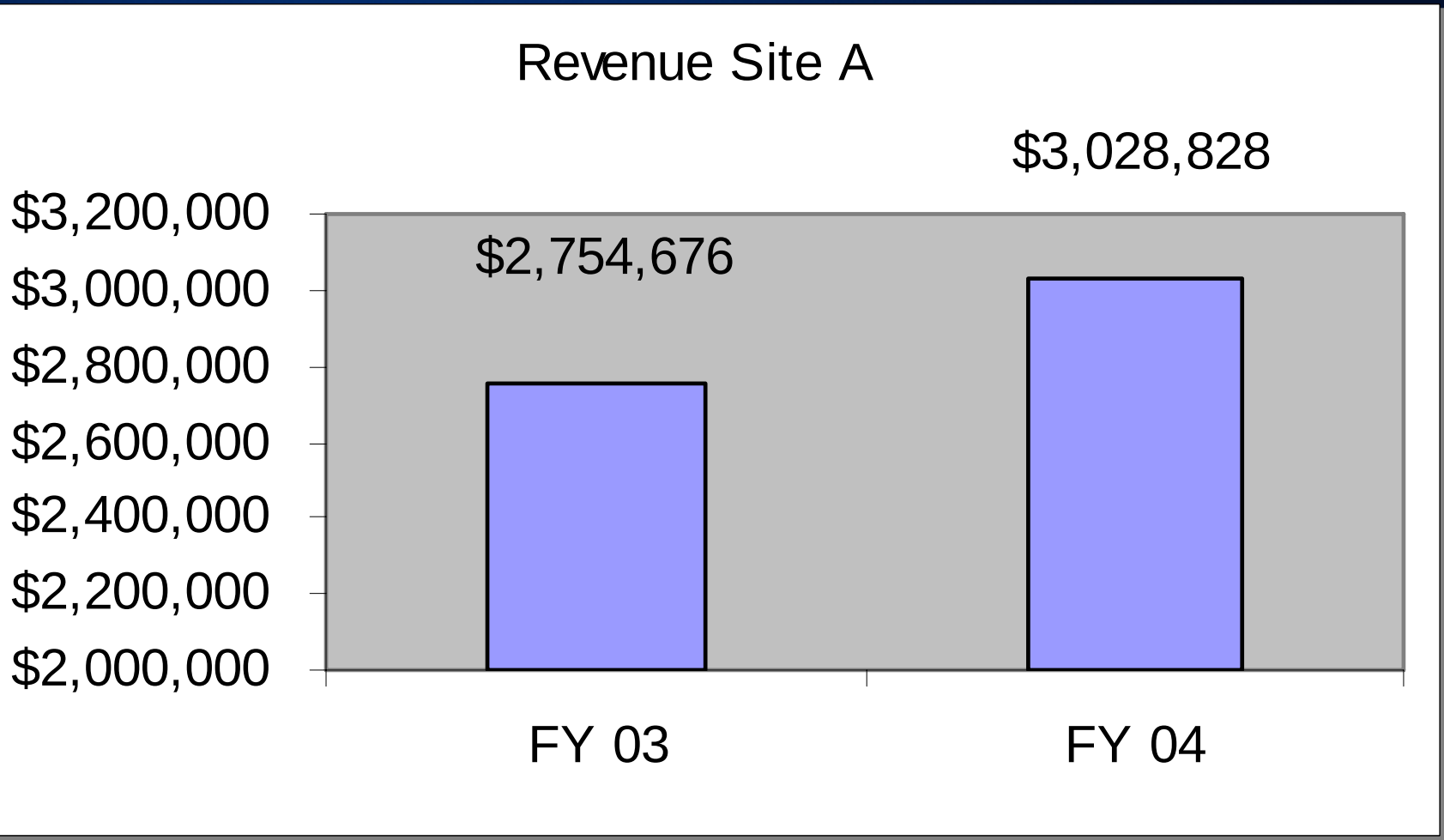
Coding Tools in EHR

- Links to coding sites, reference guides, E&M Coder



RPMS EHR

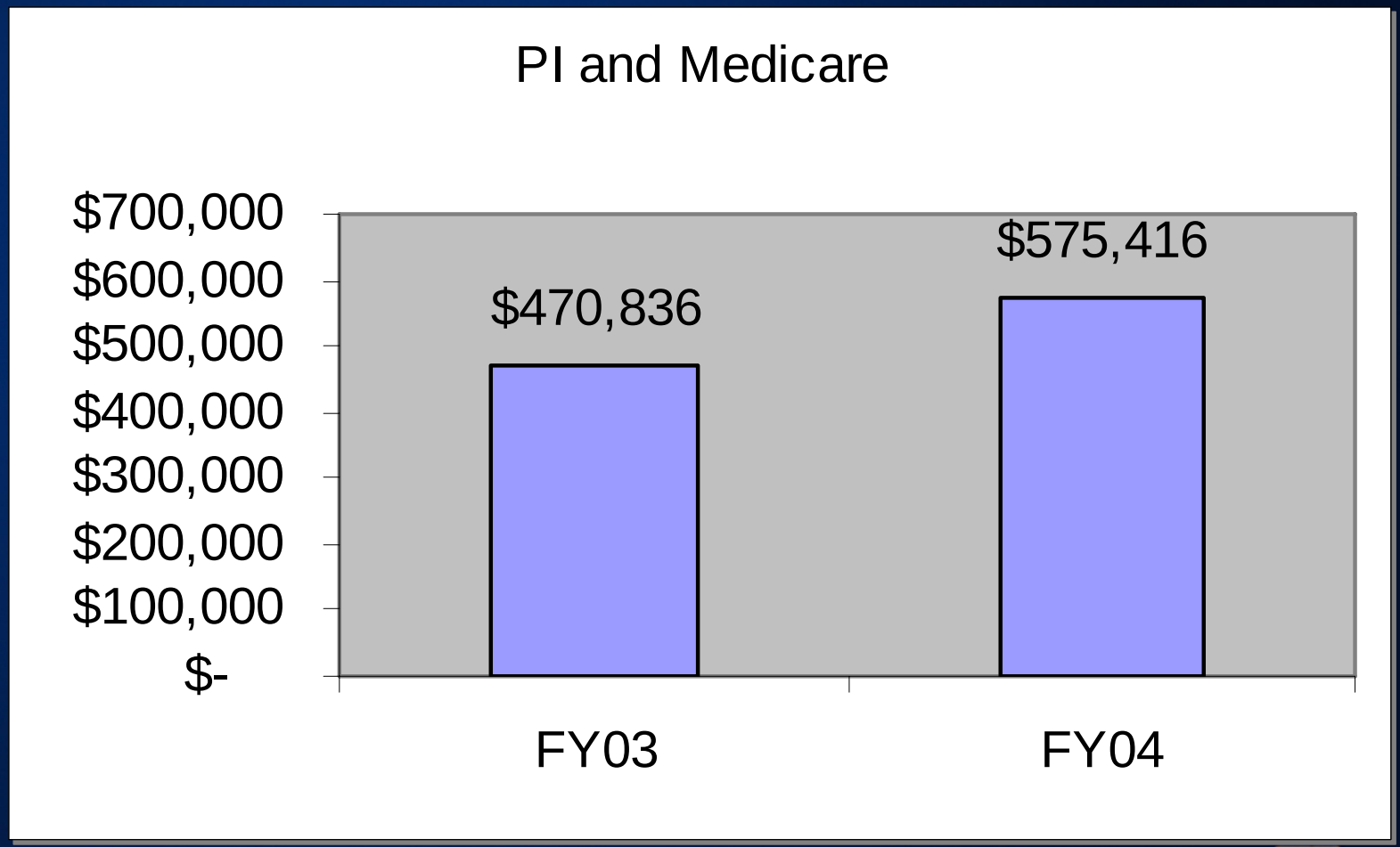
Medicare/Medicaid/PI Collections



10 % increase in total collections

RPMS EHR

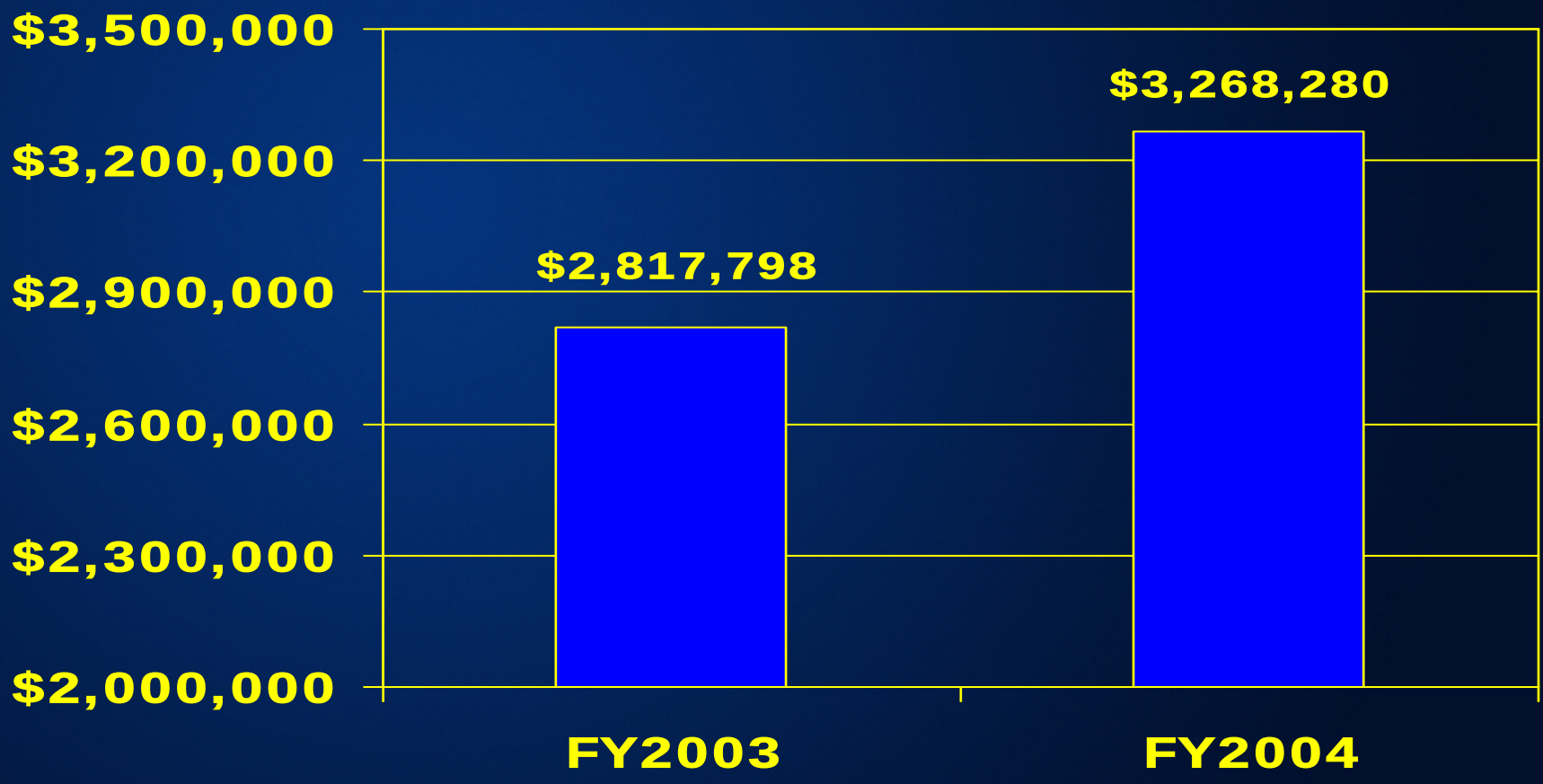
Itemized Billing Collections
Partial EHR Year



22% increase in itemized collections

RPMS EHR

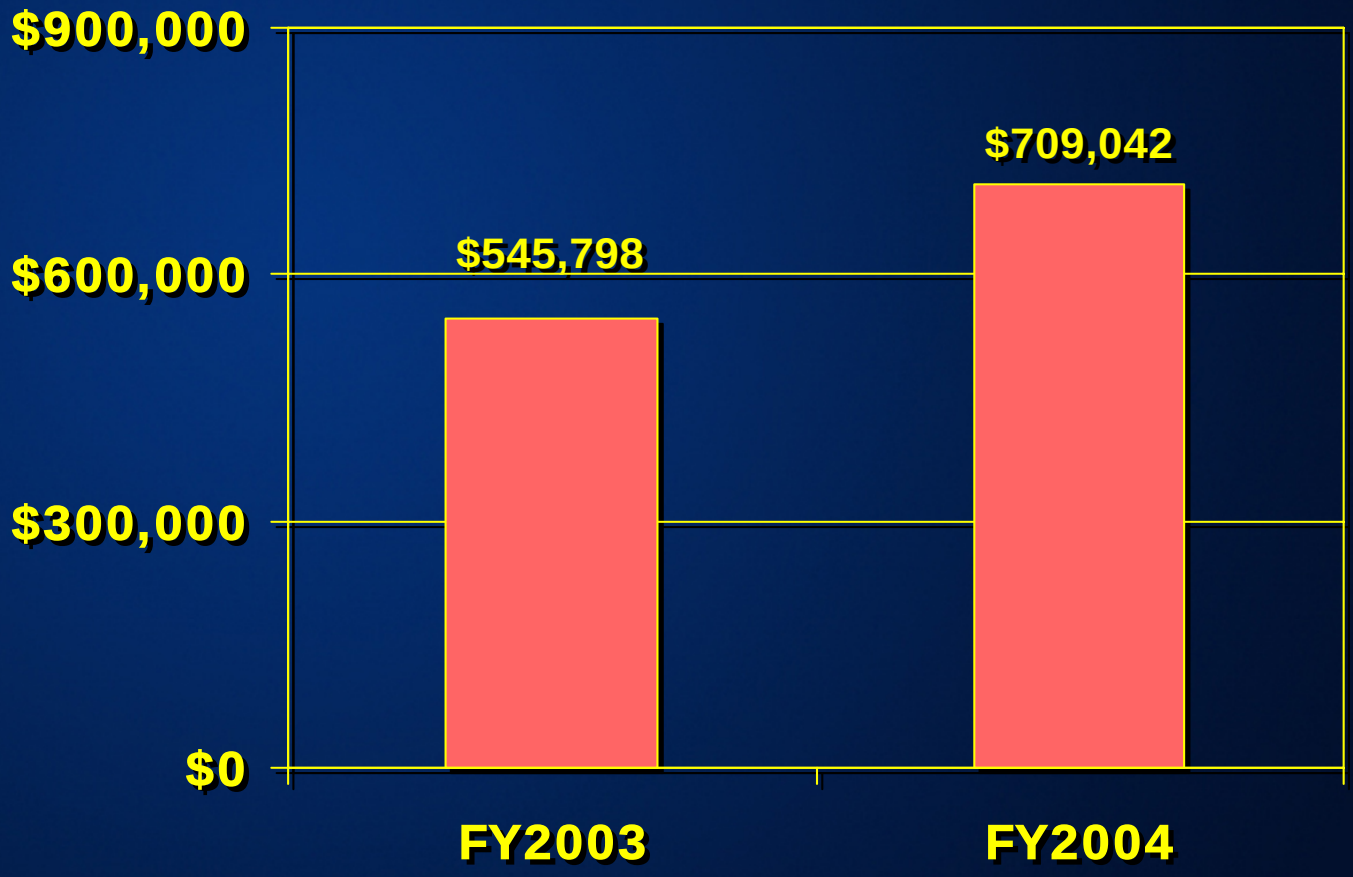
Medicaid Collections (Site B)



16% Increase from FY03 to FY04

RPMS EHR

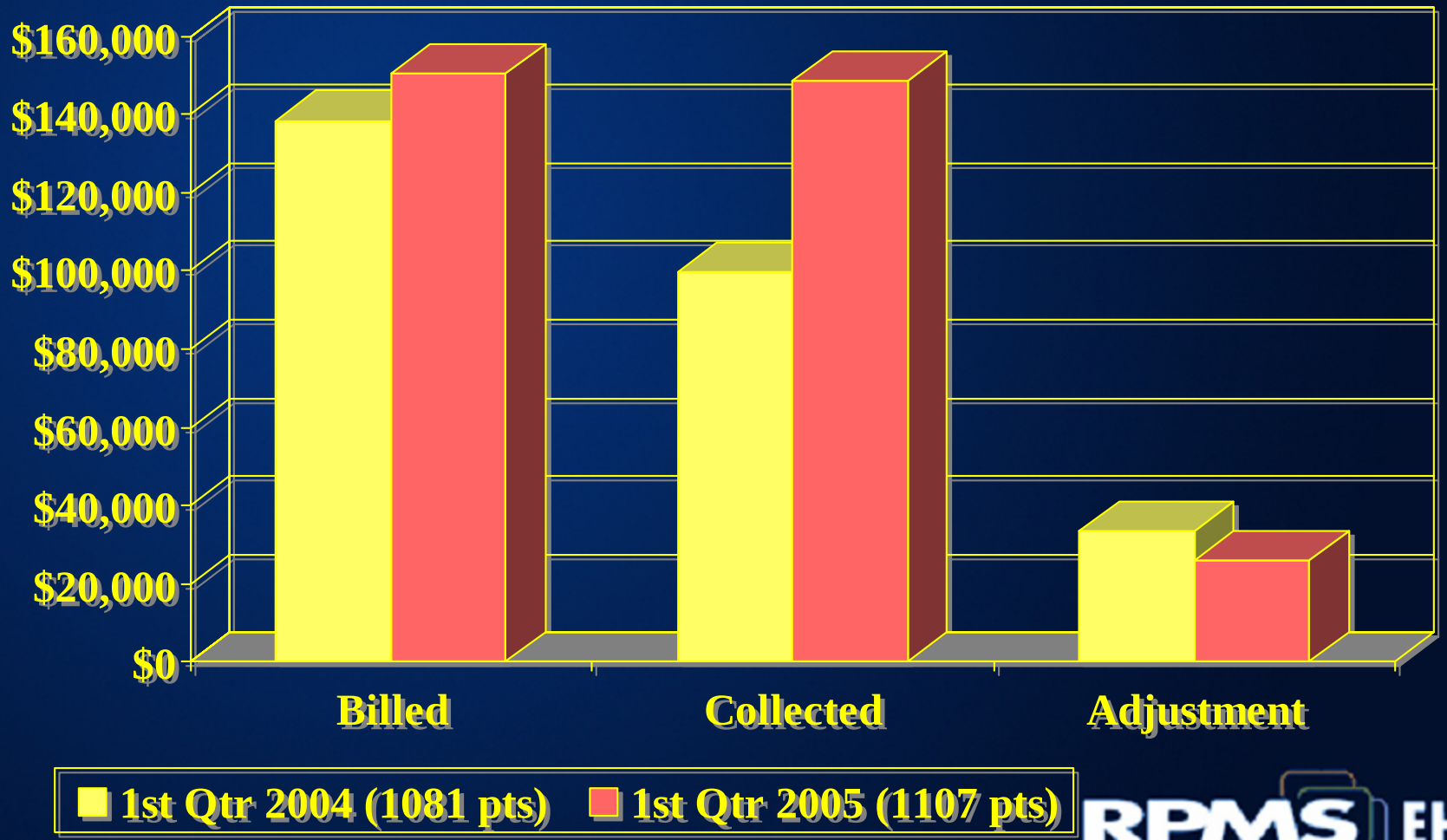
PI collections (Site B)



29.9 % Increase from FY03 to FY04

RPMS EHR

Podiatry Billing (Site D)



RPMS EHR

Optometry Billing (Site D)

RPMS EHR

Costs of EHR

- Server upgrade with redundancy
  - ~$20,000 - $120,000
- LAN upgrades if necessary
  - Cost variable depending on size of site
- User hardware/workstations
  - ~$600 - $2000 per user
  - Plus ergonomics
- Clinical Application Coordinator, additional IT staff
  - ~$80,000 each, annually
- Training costs
  - ~$5000 - $15,000

RPMS EHR

Other Cost-Related Factors

- OIT covers installation costs
- No licensing fees or support costs
- Setup and some training are brought onsite at no cost to facility (typically 3 visits)
  - ****Facilities are expected to contribute staff for training at other sites – *quid pro quo*****
- Transient learning curve/productivity loss
- Staff time managing error reports
- Improvements in documentation and service capture → **revenue**

RPMS EHR

IHS·EHR CHEROKEE INDIAN HOSPITAL

User Patient Tools Help

Patient Chart | Communication | RPMS | CIHA Intranet | Micromedex | E-Mail

Demo,Patient
1 20-Mar-1947 (57) F

GENERAL 22-Feb-2005 13:48
LAMER,CHRISTOPHER CLAYTON

Primary Care Team Unassigned

Postings CAD

Medications

View Action

Action	Outpatient Medications	Expires	Status	Last Filled	Refills Rem...
	AMOXICILLIN= 250MG CAP Qty: 1 for 1 days Sig: TAKE TWO CAPSULES BY MOUTH ONCE FOR INFECTION TREATMENT; TAKE UNTIL FINISHED	Feb 04,06	Active	Feb 03,05	2
	METFORMIN= 500MG (PLAIN) TABS Qty: 60 for 30 days Sig: TAKE ONE TABLET BY MOUTH TWICE A DAY TAKE WITH FOOD FOR DIABETES TREATMENT	Nov 13,05	Active	Nov 14,04	11
	CARBAMAZEPINE= 200MG TAB Qty: 60 for 30 days Sig: TAKE ONE TABLET BY MOUTH TWICE A DAY	Aug 21,05	Active	Jan 24,05	0
	ASPIRIN= 325MG TAB,E.C. Qty: 30 for 30 days Sig: TAKE ONE TABLET BY MOUTH DAILY - DO NOT CHEW	Mar 19,05	Active	Feb 17,05	0
	AEROCHAMBER SPACER WITH MASK (MEDIUM) Qty: 1 for 30 days Sig: USE AEROCHAMBER WITH INHALER AS DIRECTED	Mar 19,05	Active	Feb 17,05	0
	AEROCHAMBER SPACER WITH MASK (LARGE) Qty: 1 for 30 days Sig: USE AEROCHAMBER WITH INHALER AS DIRECTED	Mar 19,05	Active	Feb 17,05	0
	AEROCHAMBER DEVICE WITH MASK (SMALL) Qty: 1 for 30 days Sig: USE AEROCHAMBER WITH INHALER AS DIRECTED	Mar 19,05	Active	Feb 17,05	0
	COAL TAR SHAMPOO 5% (PENTRAX) Qty: 236 for 30 days Sig: SHAMPOO TO AFFECTED AREA DAILY (MASSAGE INTO WET HAIR/SCALP. RINSE)	Mar 19,05	Active	Feb 17,05	0
	SPACER (TUBE) Qty: 1 for 30 days Sig: 1 ADAPTER WITH INHALER AS DIRECTED	Mar 18,05	Active	Feb 16,05	0
	BENADRYL-MAALOX-XYLOCAINE 1:1:1 Qty: 30 for 30 days Sig: TAKE 5 ML (1 TSP) BY MOUTH AS DIRECTED	Mar 18,05	Active	Feb 16,05	0
	BUTALBITAL,APAP, CAFFEINE TABS Qty: 1 for 1 days Sig: TAKE 1 TABLET BY MOUTH EVERY 4 HOURS IF NEEDED	Mar 17,05	Active	Feb 15,05	0
	SODIUM CHLORIDE SOL., NASAL SPRAY (45ML) Qty: 45 for 30 days Sig: SPRAY 1 SPRAY INTO EACH NOSTRIL TWICE A DAY	Mar 17,05	Active	Feb 15,05	0
	IPRATROPIUM/ALBUT MDI <14.7GM> Qty: 14.7 for 30 days Sig: INHALE 1 PUFF BY MOUTH EVERY 6 HOURS SHAKE WELL BEFORE USING	Mar 15,05	Active	Feb 13,05	0

Action	Inpatient Medications	Stop Date	Status

Notifications | Cover Sheet | Triage | Wellness | Notes | Orders | Medications | Labs | Prob/POV | Services | Reports | D/C Summ | Consults | Privacy

LAMER,CHRISTOPHER CLAYTON | CHEROKEE-HO.NSH.IHS.GOV | CIHA HOSPITAL

Start | IHS·EHR ... | 1:50 PM

Current and Upcoming Enhancements

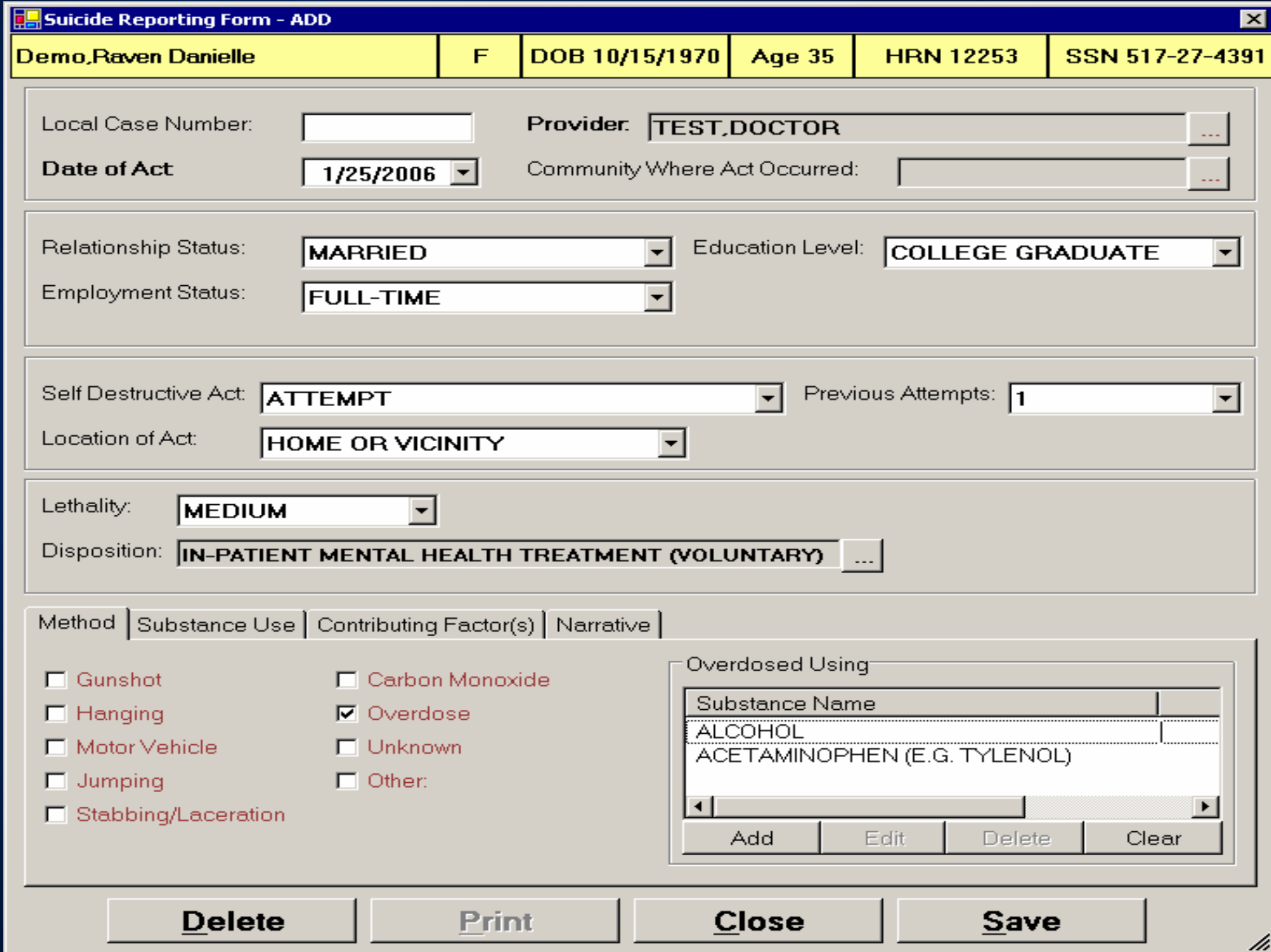
- EHR Suicide Reporting Form
- EHR version 1.1
- Pharmacy Counseling Macro
- Behavioral Health Components
- Referred Care (RCIS) Components

RPMS EHR

Suicide Reporting Form

- Agency initiative to reduce suicide
- 2006 GPRA performance indicator
  - Establish baseline data using SRF
- Data collection form for suicide & suicide related events
  - Completions, attempts, serious ideation
- Suicide form available vis RPMS menu, Patient Chart, and now EHR
- Data exports via AMH

RPMS EHR


Suicide Reporting Form - ADD
Demo,Raven Danielle
F
DOB 10/15/1970
Age 35
HRN 12253
SSN 517-27-4391
Local Case Number:
Provider:
TEST,DOCTOR
Date of Act
1/25/2006
Community Where Act Occurred:
Relationship Status:
MARRIED
Education Level:
COLLEGE GRADUATE
Employment Status:
FULL-TIME
Self Destructive Act:
ATTEMPT
Previous Attempts:
1
Location of Act:
HOME OR VICINITY
Lethality:
MEDIUM
Disposition:
IN-PATIENT MENTAL HEALTH TREATMENT (VOLUNTARY)
Method
Substance Use
Contributing Factor(s)
Narrative
Gunshot
Hanging
Motor Vehicle
Jumping
Stabbing/Laceration
Carbon Monoxide
Overdose
Unknown
Other:
Overdosed Using
Substance Name
ALCOHOL
ACETAMINOPHEN (E.G. TYLENOL)
Add
Edit
Delete
Clear
Delete
Print
Close
Save

EHR v1.1

- Improved medication management
- Clinical indication for lab orders
- Problem list ordering & prioritization
- Service association sets (CPT etc)
- Improved patient ed documentation
- Documentation of refusals
- Other CRS-related documentation
- More . . . .

RPMS EHR

Med Management Enhancements

- Improved readability of medication list
  - Shading of alternate rows
  - Resize, hide columns for more space
- Default retrieval range 180 days
  - Selectable to 1000 days
- Filterable by Active or Chronic status
- Select and “process” multiple meds in sequence

RPMS EHR

Med Management Enhancements

- Hover help for Hold reason
- Providers can discontinue Held meds
- Providers can discontinue Expired meds
  - Expired meds retain Chronic Med flag unless renewed/copied to new order
  - Discontinued meds lose Chronic Med flag
- Changes in Expired status rules
- Formatted printable medication lists

RPMS EHR

File View Action

Active Only | Chronic Only | 180 days | Print... | Process... | New...

Action	Chronic	Outpatient Medications	Status	Issued	Last Filled	Expires	Refills Remaining	Rx #	Provider
	✓	FUROSEMIDE 40MG TAB** Qty: 30 for 30 days Sig: TAKE ONE TABLET BY MOUTH EVERY MORNING TO HELP CONTROL BLOOD PRESSURE OR EXCESS FLUID	Not Picked Up	10-Mar-2006		11-Mar-2007	3	1626311	USER,POWER
	✓	FUROSEMIDE 20MG TAB** Qty: 30 for 30 days Sig: TAKE ONE TABLET BY MOUTH EVERY MORNING TO HELP CONTROL BLOOD PRESSURE OR EXCESS FLUID	Expired	31-Mar-2006	31-Mar-2006	30-Apr-2006	0	1626314	USER,POWER
	✓	ACETAMINOPHEN 325MG TAB Qty: 60 for 30 days Sig: TAKE TWO TABLETS BY MOUTH BEFORE MEALS AND AT BEDTIME TO RELIEVE PAIN OR FEVER	Expired	03-Mar-2006	10-Mar-2006	02-Apr-2006	0	1626308	USER,POWER
	✓	LISINOPRIL 20MG TAB** Qty: 30 for 30 days Sig: TAKE ONE TABLET BY MOUTH ONCE EACH DAY TAKE FOR BLOOD PRESSURE	Active	31-Mar-2006	31-Mar-2006	01-Apr-2007	11	1626315	USER,POWER
		DILTIAZEM 30MG TAB Qty: 90 for 30 days Sig: TAKE ONE TABLET BY MOUTH THREE TIMES A DAY	Active	31-Mar-2006	31-Mar-2006	01-Apr-2007	3	1626313	USER,POWER
		NIFEDIPINE 30MG XL TAB Qty: 60 for 30 days Sig: TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD	Expired	10-Feb-2005	10-Feb-2005	11-Feb-2006	3	1626307	USER,POWER

Action	Inpatient Medications	Status	Stop Date

Notifications | Cover Sheet | Prob/POV | Services | Notes | Orders | Medications | Labs | Hlth Maint | D/C Summ | Reports | Consults

USER,POWER | DEMO.CIAINFORMATICS.COM | DEMO HOSPITAL | 17-May-2006 18:20

VueCentric

User Help

Claw,Beth
217183 05-Apr-1935 (70) F

Visit not selected
USER,POWER

File View

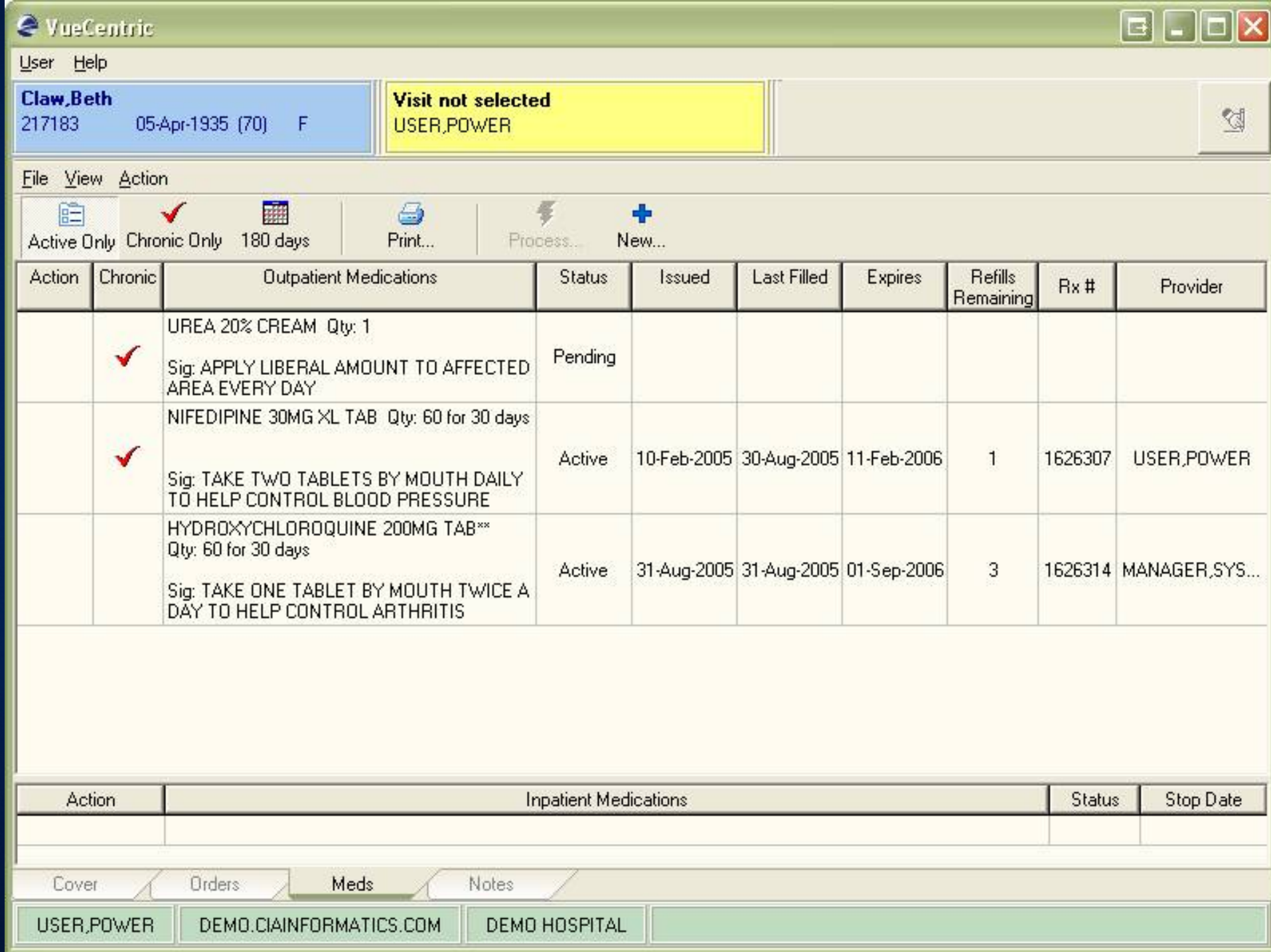
Active Only | Chronic Only | 180 days | Print... | Process... | New...

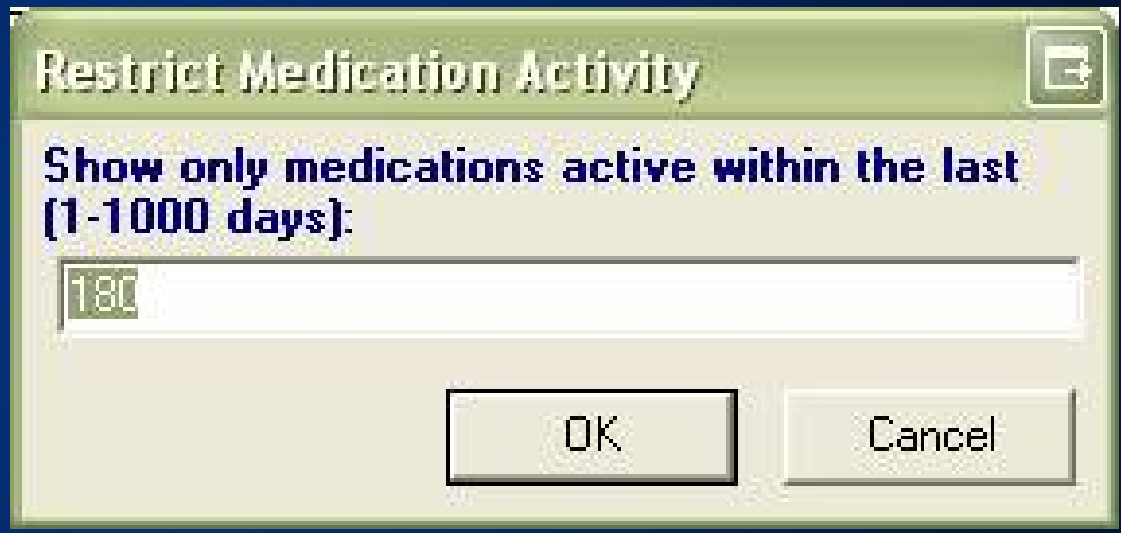
Action	Chronic	Outpatient Medications	Status	Issued	Last Filled	Expires	Refills Remaining	Rx #	Provider
	✓	UREA 20% CREAM Qty: 1 Sig: APPLY LIBERAL AMOUNT TO AFFECTED AREA EVERY DAY	Pending						
	✓	NIFEDIPINE 30MG XL TAB Qty: 60 for 30 days Sig: TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD	Active	10-Feb-2005	30-Aug-2005	11-Feb-2006	1	1626307	USER,POWER
		HYDROXYCHLOROQUINE 200MG TAB** Qty: 60 for 30 days Sig: TAKE ONE TABLET BY MOUTH TWICE A DAY TO HELP CONTROL	Active	31-Aug-2005	31-Aug-2005	01-Sep-2006	3	1626314	MANAGER,SYS...
		ACETAMINOPHEN 325MG TAB Qty: 30 for 30 days Sig: TAKE ONE TABLET BY MOUTH ONCE EACH DAY TO RELIEVE PAIN OR FEVER	Expired	29-Apr-2005	29-Apr-2005	29-May-20...	0	1626308	MANAGER,SYS...
		PSEUDOEPHEDRINE 60MG TAB Qty: 120 for 30 days							

Action	Inpatient Medications	Status	Stop Date

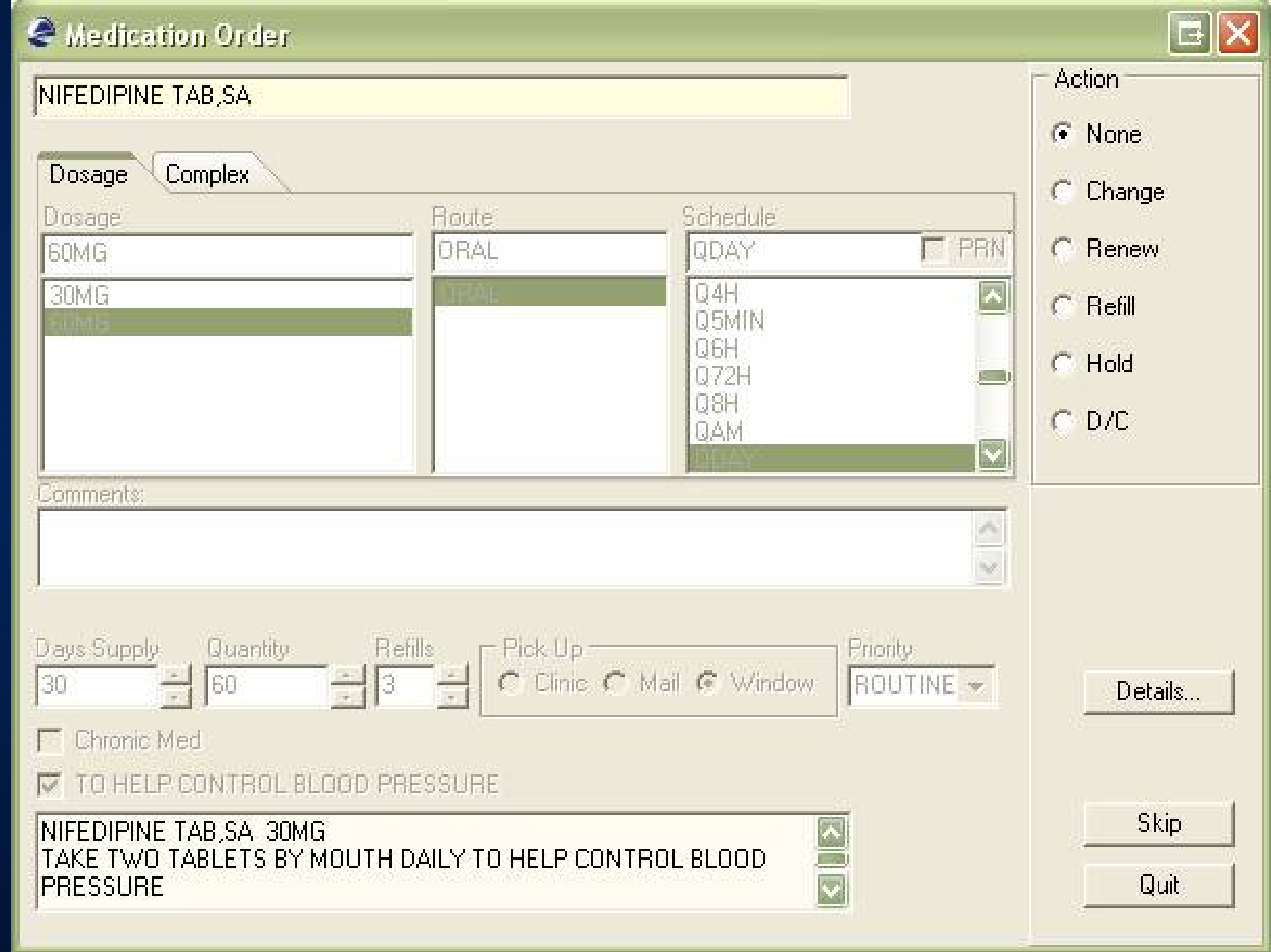
Cover | Orders | Meds | Notes

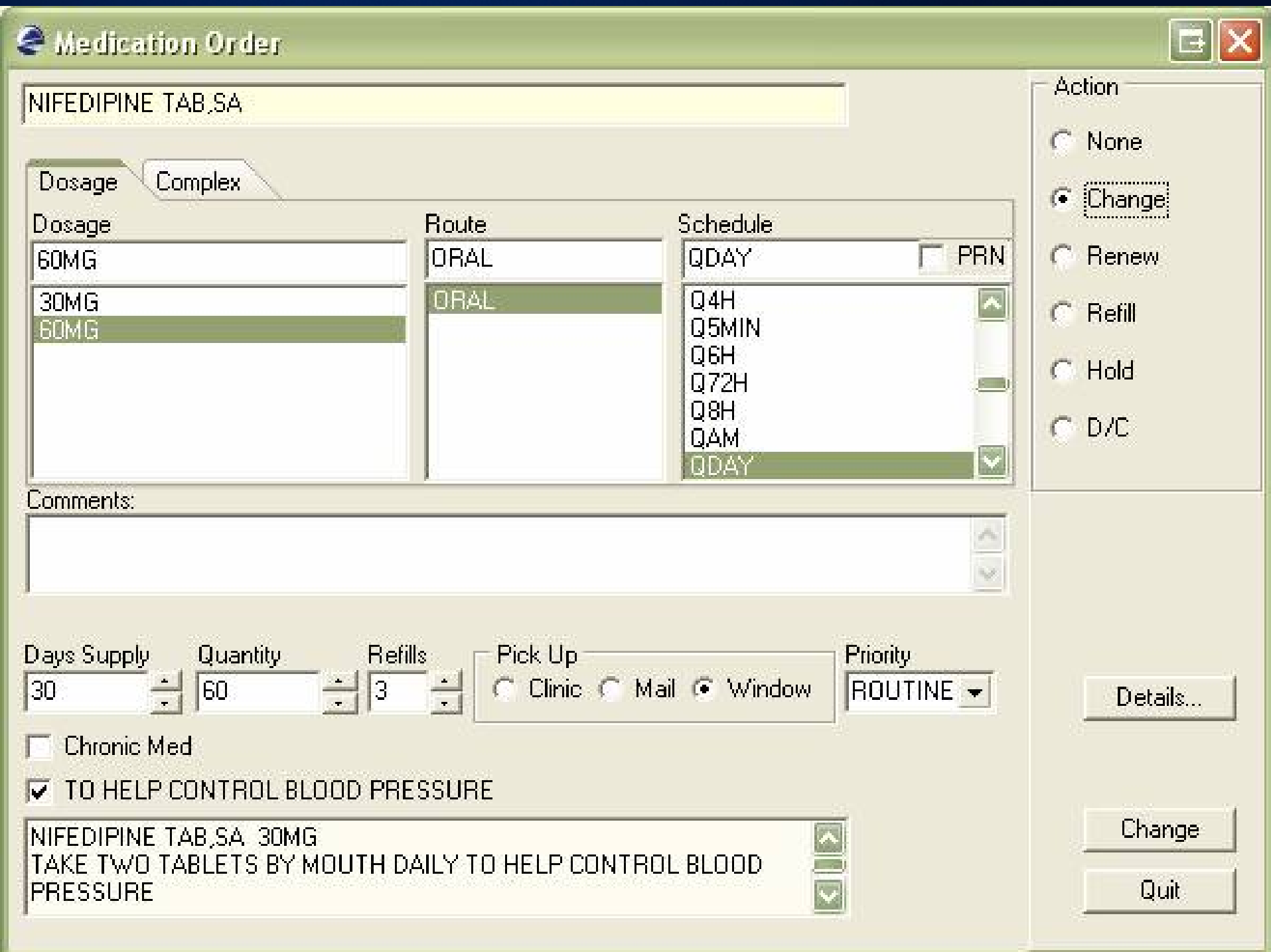
USER,POWER | DEMO.CIAINFORMATICS.COM | DEMO HOSPITAL

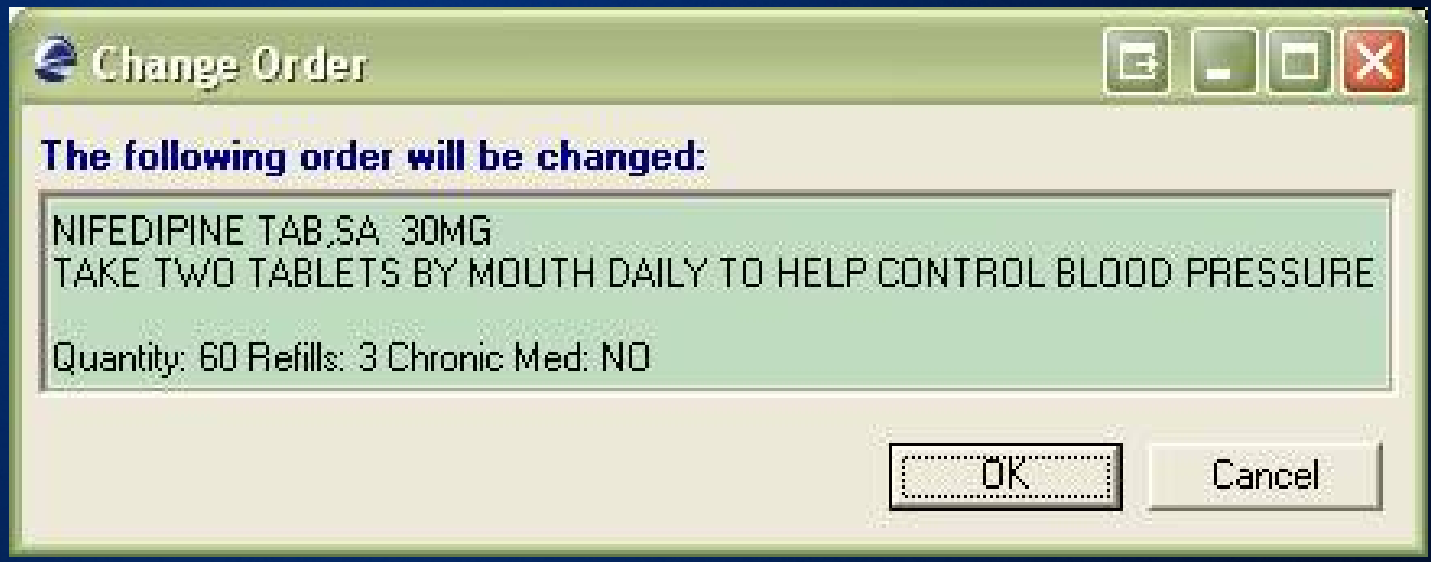

VueCentric
User Help
Claw,Beth
217183 05-Apr-1935 (70) F
Visit not selected
USER,POWER
File View Action
Active Only
Chronic Only
180 days
Print...
Process...
New...
Action
Chronic
Outpatient Medications
Status
Issued
Last Filled
Expires
Refills Remaining
Rx #
Provider
UREA 20% CREAM Qty: 1
Sig: APPLY LIBERAL AMOUNT TO AFFECTED AREA EVERY DAY
Pending
NIFEDIPINE 30MG XL TAB Qty: 60 for 30 days
Sig: TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD PRESSURE
Active
10-Feb-2005
30-Aug-2005
11-Feb-2006
1
1626307
USER,POWER
HYDROXYCHLOROQUINE 200MG TAB**
Qty: 60 for 30 days
Sig: TAKE ONE TABLET BY MOUTH TWICE A DAY TO HELP CONTROL ARTHRITIS
Active
31-Aug-2005
31-Aug-2005
01-Sep-2006
3
1626314
MANAGER,SYS...
Action
Inpatient Medications
Status
Stop Date
Cover
Orders
Meds
Notes
USER,POWER
DEMO.CIAINFORMATICS.COM
DEMO HOSPITAL


Restrict Medication Activity
Show only medications active within the last (1-1000 days):
180
OK
Cancel

RPMS EHR


Medication Order
NIFEDIPINE TAB,SA
Dosage
Complex
Dosage
60MG
30MG
Route
ORAL
Schedule
QDAY
PRN
Q4H
Q5MIN
Q6H
Q72H
Q8H
QAM
Action
None
Change
Renew
Refill
Hold
D/C
Comments:
Days Supply
30
Quantity
60
Refills
3
Pick Up
Clinic
Mail
Window
Priority
ROUTINE
Details...
Chronic Med
TO HELP CONTROL BLOOD PRESSURE
NIFEDIPINE TAB,SA 30MG
TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD PRESSURE
Skip
Quit


Medication Order
NIFEDIPINE TAB,SA
Dosage
Complex
Dosage
60MG
30MG
60MG
Route
ORAL
ORAL
Schedule
QDAY
PRN
Q4H
Q5MIN
Q6H
Q72H
Q8H
QAM
QDAY
Action
None
Change
Renew
Refill
Hold
D/C
Comments:
Days Supply
30
Quantity
60
Refills
3
Pick Up
Clinic
Mail
Window
Priority
ROUTINE
Details...
Chronic Med
TO HELP CONTROL BLOOD PRESSURE
NIFEDIPINE TAB,SA 30MG
TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD PRESSURE
Change
Quit


Change Order
The following order will be changed:
NIFEDIPINE TAB,SA 30MG
TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD PRESSURE
Quantity: 60 Refills: 3 Chronic Med: NO
OK
Cancel

RPMS EHR

File View Action
Active Only
Chronic Only
180 days
Print...
Process...
New...
Action
Chronic
Outpatient Medications
Status
Issued
Last Filled
Expires
Refills Remaining
Rx #
Provider
FUROSEMIDE 40MG TAB** Qty: 30 for 30 days
Sig: TAKE ONE TABLET BY MOUTH EVERY MORNING TO HELP CONTROL BLOOD PRESSURE OR EXCESS FLUID
Not Picked Up
10-Mar-2006
11-Mar-2007
3
1626311
USER,POWER
FUROSEMIDE 20MG TAB** Qty: 30 for 30 days
Sig: TAKE ONE TABLET BY MOUTH EVERY MORNING TO HELP CONTROL BLOOD PRESSURE OR EXCESS FLUID
Expired
31-Mar-2006
31-Mar-2006
30-Apr-2006
0
1626314
USER,POWER
ACETAMINOPHEN 325MG TAB Qty: 60 for 30 days
Sig: TAKE TWO TABLETS BY MOUTH BEFORE MEALS AND AT BEDTIME TO RELIEVE PAIN OR FEVER
Expired
03-Mar-2006
10-Mar-2006
02-Apr-2006
0
1626308
USER,POWER
LISINOPRIL 20MG TAB** Qty: 30 for 30 days
Sig: TAKE ONE TABLET BY MOUTH ONCE EACH DAY TAKE FOR BLOOD PRESSURE
Active
31-Mar-2006
31-Mar-2006
01-Apr-2007
11
1626315
USER,POWER
DILTIAZEM 30MG TAB Qty: 90 for 30 days
Sig: TAKE ONE TABLET BY MOUTH THREE TIMES A DAY
Active
31-Mar-2006
31-Mar-2006
01-Apr-2007
3
1626313
USER,POWER
NIFEDIPINE 30MG XL TAB Qty: 60 for 30 days
Sig: TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD
Expired
10-Feb-2005
10-Feb-2005
11-Feb-2006
3
1626307
USER,POWER
Action
Inpatient Medications
Status
Stop Date
Notifications
Cover Sheet
Prob/POV
Services
Notes
Orders
Medications
Labs
Hlth Maint
D/C Summ
Reports
Consults
USER,POWER
DEMO.CIAINFORMATICS.COM
DEMO HOSPITAL
17-May-2006 18:20

Print Medication List
Days to Retrieve:
180
Active Only
Chronic Only
List Detail
Brief
Detailed
Print...
Cancel

Adverse Reactions: No Allergy Assessment

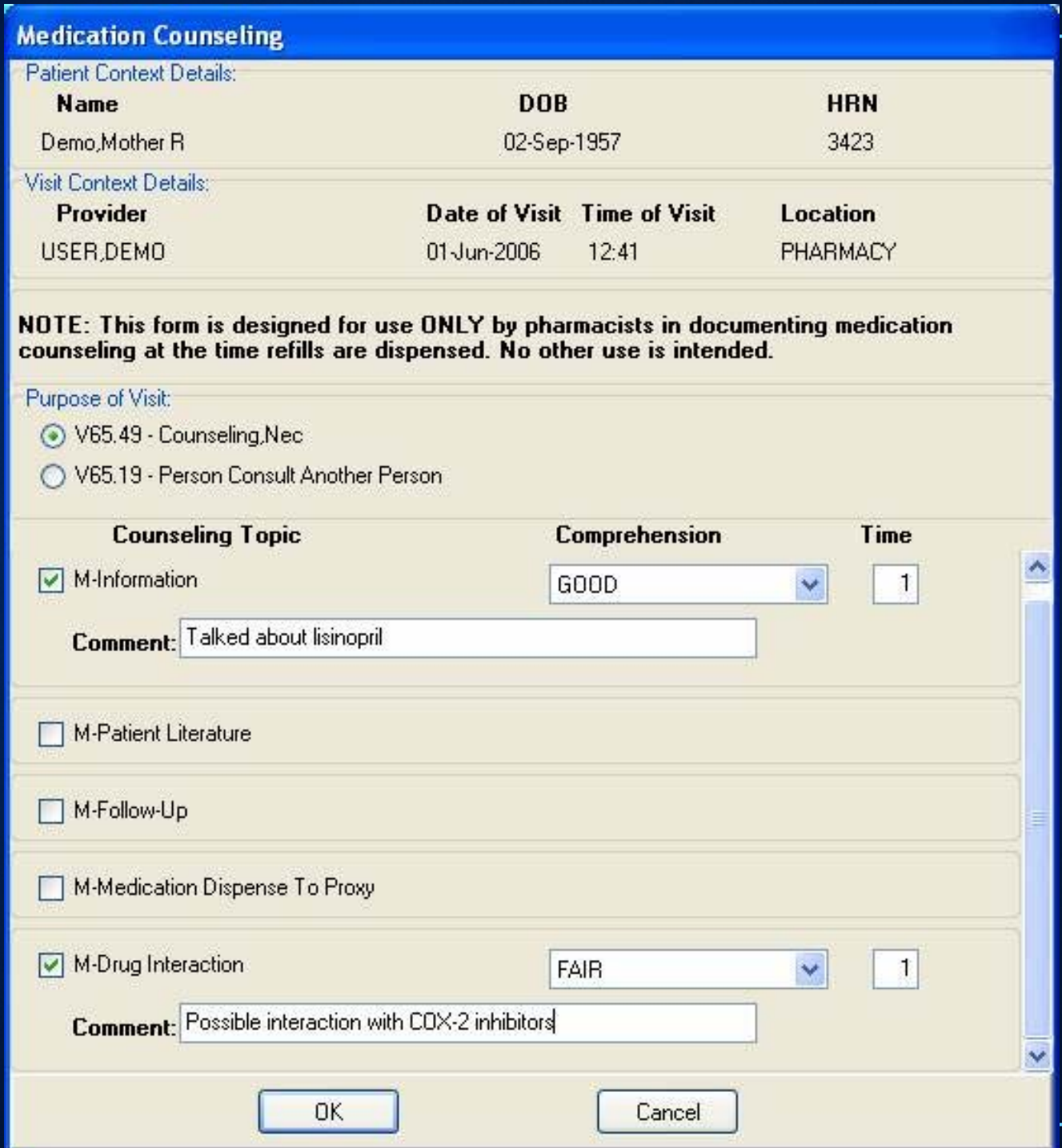
Medication	Prescriber	Status	Refills Left
UREA 20% CREAM Qty: 1 Sig: APPLY LIBERAL AMOUNT TO AFFECTED AREA EVERY DAY		Pending	
NIFEDIPINE 30MG XL TAB Qty: 60 for 30 days Sig: TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD PRESSURE	USER,POWER	Active	1
HYDROXYCHLOROQUINE 200MG TAB** Qty: 60 for 30 days Sig: TAKE ONE TABLET BY MOUTH TWICE A DAY TO HELP CONTROL ARTHRITIS	MANAGER,SYSTEM	Active	3
ACETAMINOPHEN 325MG TAB Qty: 30 for 30 days Sig: TAKE ONE TABLET BY MOUTH ONCE EACH DAY TO RELIEVE PAIN OR FEVER	MANAGER,SYSTEM	Expired	0
PSEUDOEPHEDRINE 60MG TAB Qty: 120 for 30 days Sig: TAKE ONE TABLET BY MOUTH FOUR TIMES A DAY AS NEEDED TO RELIEVE STUFFINESS	MANAGER,SYSTEM	RTS	0

Adverse Reactions: No Allergy Assessment

Medication	Chronic	Status	Issued	Last Filled	Expires	Refills Remaining	Prescriber	Rx #
UREA 20% CREAM Qty: 1 Sig: APPLY LIBERAL AMOUNT TO AFFECTED AREA EVERY DAY	Yes	Pending						
NIFEDIPINE 30MG XL TAB Qty: 60 for 30 days Sig: TAKE TWO TABLETS BY MOUTH DAILY TO HELP CONTROL BLOOD PRESSURE	Yes	Active	10-Feb-2005	30-Aug-2005	11-Feb-2006	1	USER,POWER	1626307

Pharmacy Education Macro

- Designed for med pickup encounters to facilitate documentation of counseling



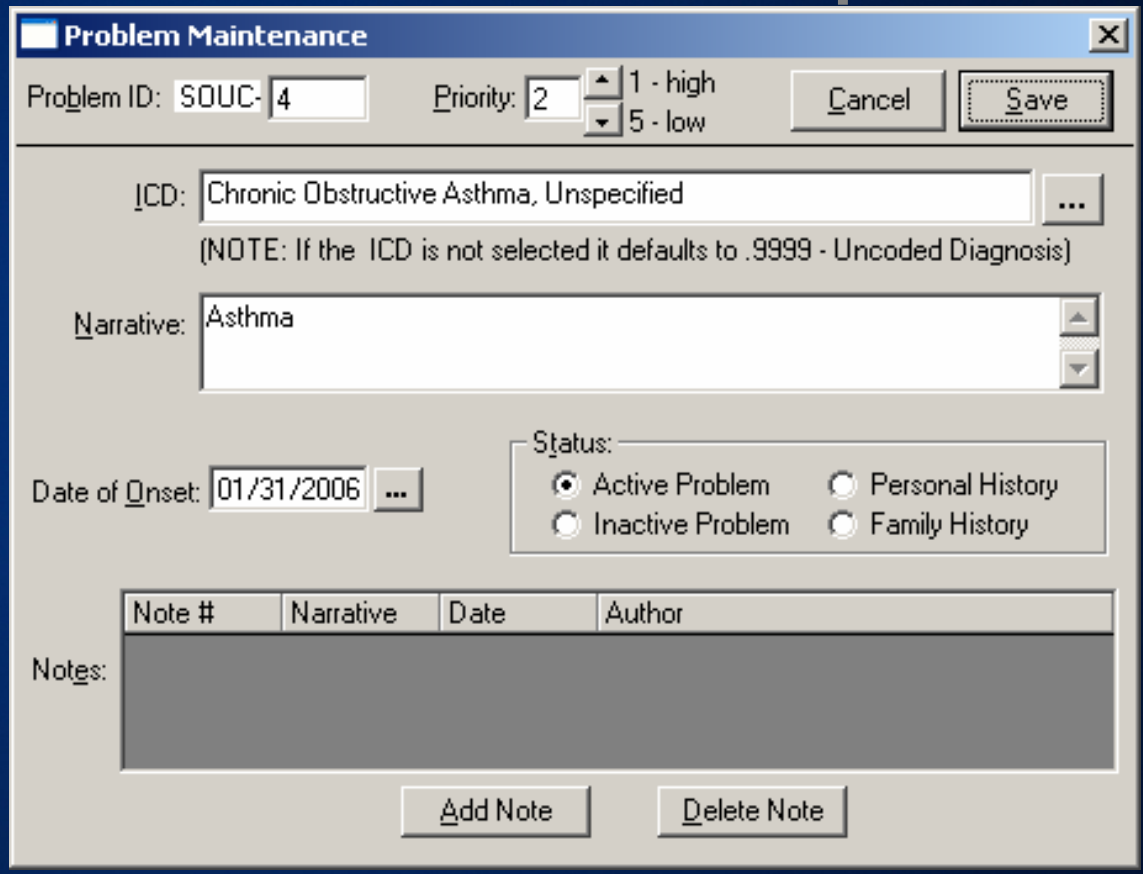
Creates a visit

Populates pre-set POV

Enter standard medication counseling patient education

RPMS EHR

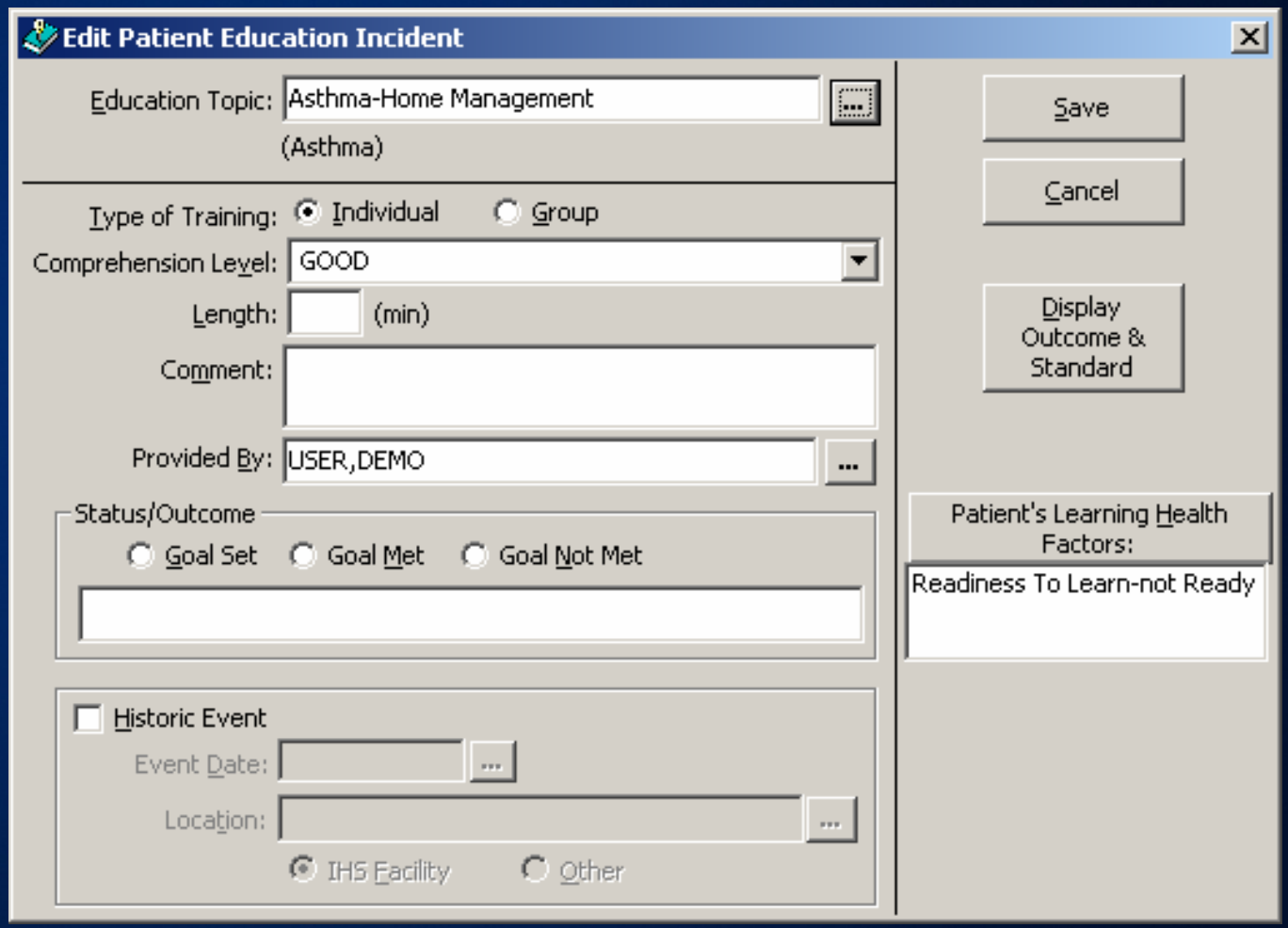
Problem List Component



- Group problems using decimals
- Assign temporary priorities

RPMS EHR

Patient Education Component

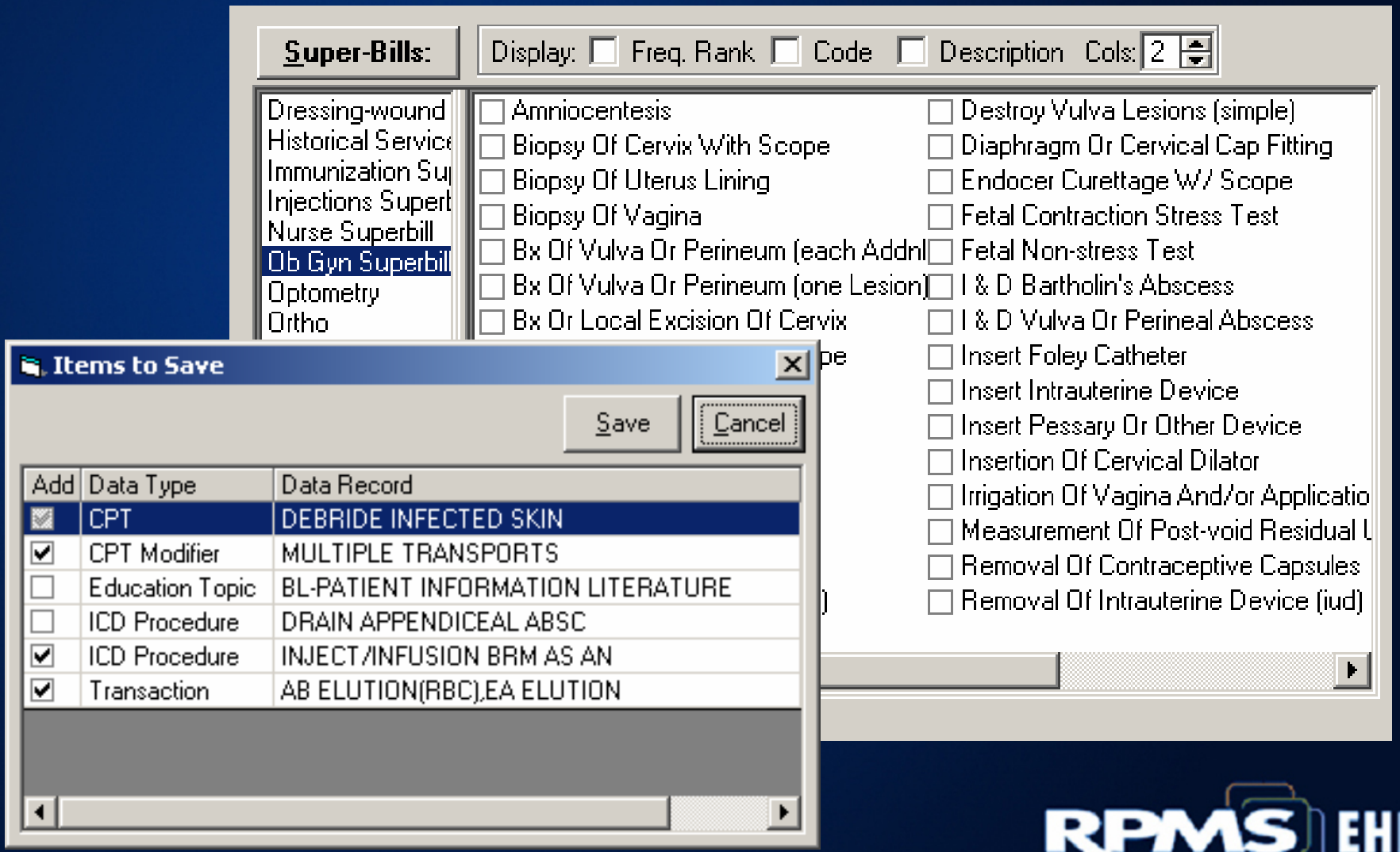


RPMS EHR

Personal Health Component

RPMS EHR

Service Association Sets

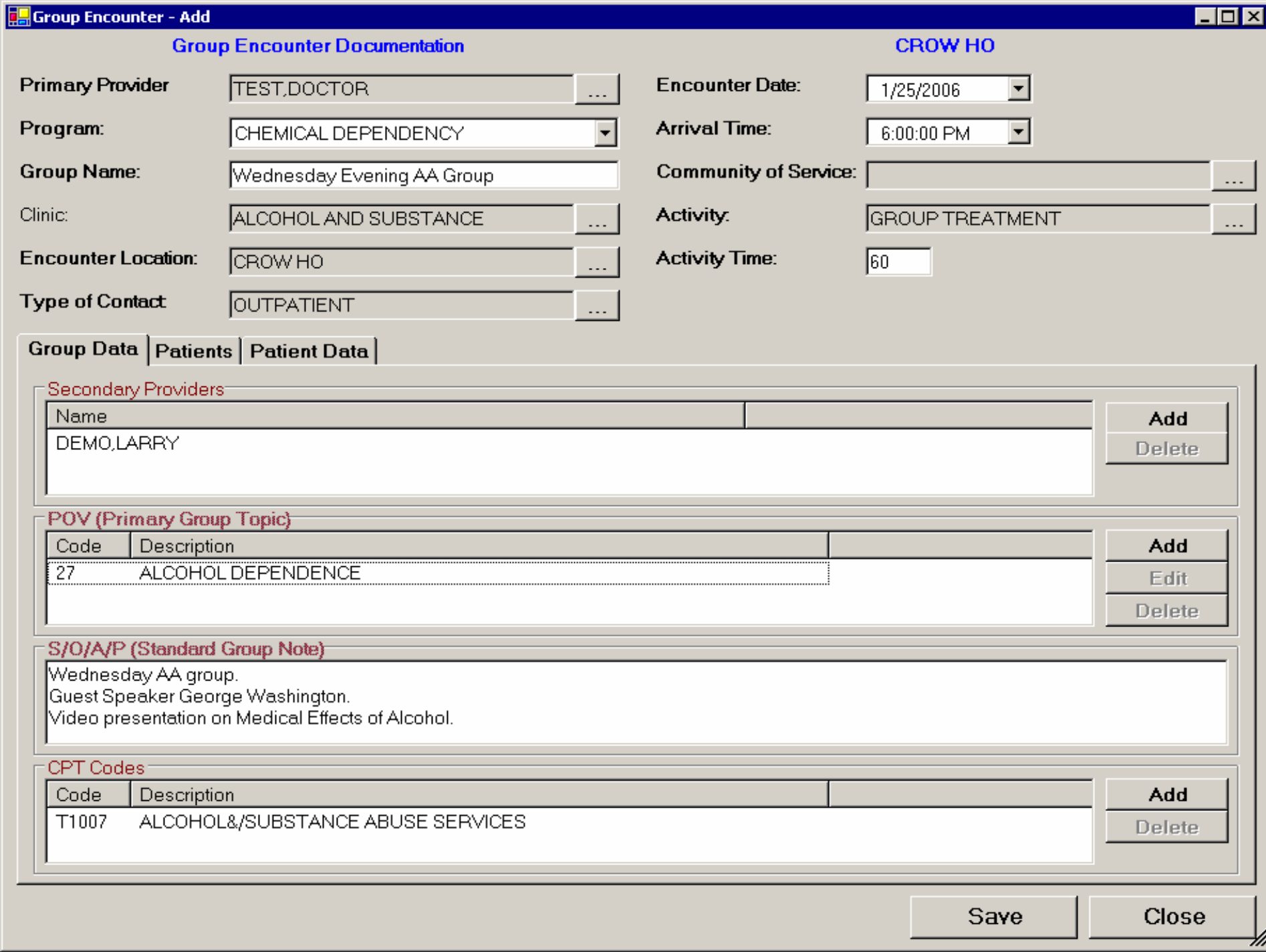


RPMS EHR

Behavioral Health Components

- Full Behavioral Health System functionality
  - Visit Entry, Administrative Entry, Group, Suicide Reporting
  - Comparable to IHS Patient Chart
  - Integrated with EHR
  - Order entry for prescribing BH providers
  - TIU notes for documentation
  - Testing beginning 02/2006

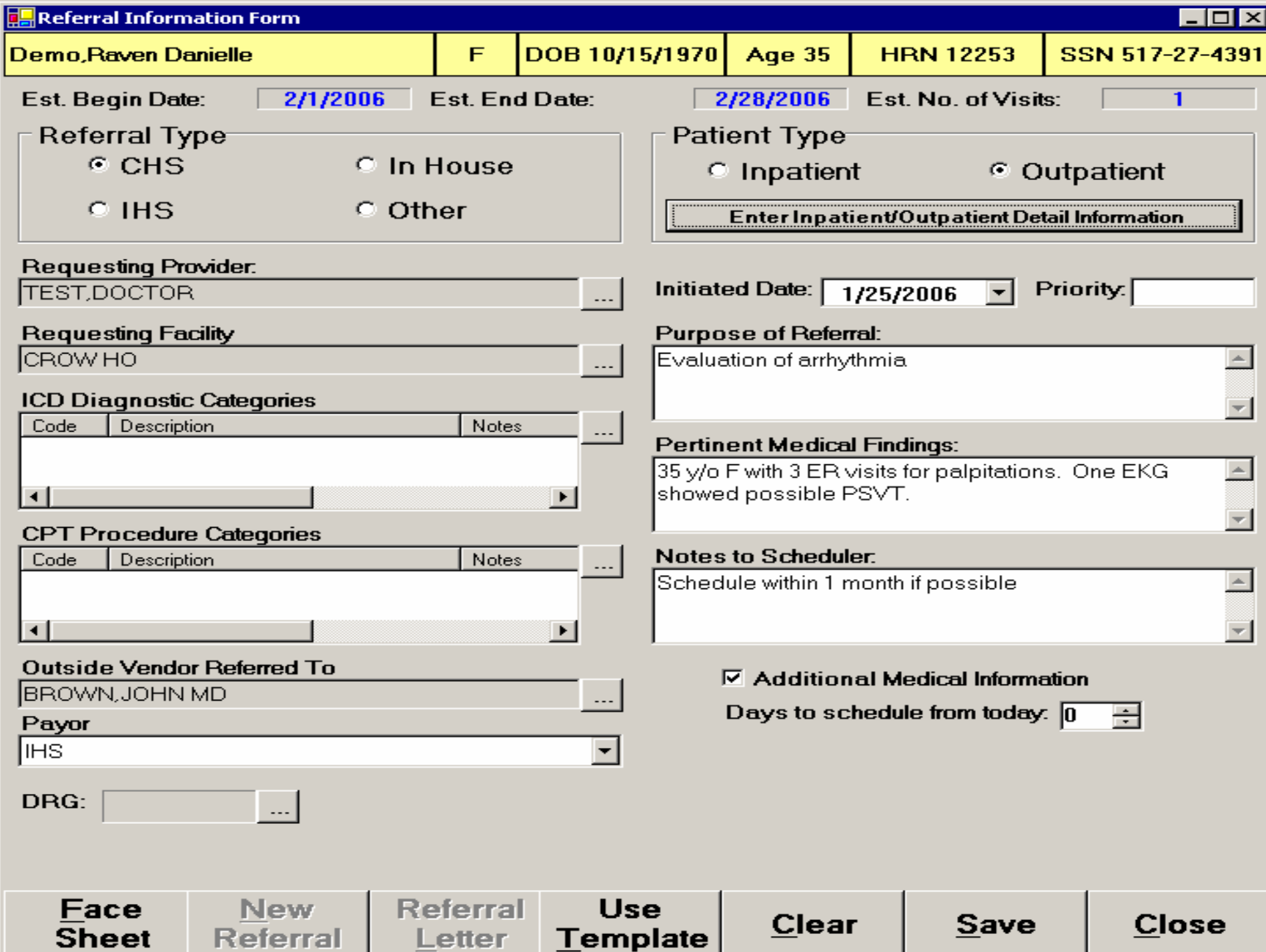
RPMS EHR


Group Encounter - Add
Group Encounter Documentation
CROW HO
Primary Provider
TEST,DOCTOR
Program:
CHEMICAL DEPENDENCY
Group Name:
Wednesday Evening AA Group
Clinic:
ALCOHOL AND SUBSTANCE
Encounter Location:
CROW HO
Type of Contact
OUTPATIENT
Encounter Date:
1/25/2006
Arrival Time:
6:00:00 PM
Community of Service:
Activity:
GROUP TREATMENT
Activity Time:
60
Group Data
Patients
Patient Data
Secondary Providers
Name
DEMO,LARRY
Add
Delete
POV (Primary Group Topic)
Code
Description
27
ALCOHOL DEPENDENCE
Add
Edit
Delete
S/O/A/P (Standard Group Note)
Wednesday AA group.
Guest Speaker George Washington.
Video presentation on Medical Effects of Alcohol.
CPT Codes
Code
Description
T1007
ALCOHOL&/SUBSTANCE ABUSE SERVICES
Add
Delete
Save
Close

Referred Care Information System

- New RCIS version (4.0) just released
- EHR components in development
  - List view of referrals (by patient, by provider, or by other filters)
  - Entry of new referrals
  - RCIS reports

RPMS EHR


Referral Information Form
Demo,Raven Danielle
F
DOB 10/15/1970
Age 35
HRN 12253
SSN 517-27-4391
Est. Begin Date:
2/1/2006
Est. End Date:
2/28/2006
Est. No. of Visits:
1
Referral Type
CHS
In House
IHS
Other
Patient Type
Inpatient
Outpatient
Enter Inpatient/Outpatient Detail Information
Requesting Provider:
TEST,DOCTOR
Initiated Date:
1/25/2006
Priority:
Requesting Facility
CROW HO
Purpose of Referral:
Evaluation of arrhythmia
ICD Diagnostic Categories
Code
Description
Notes
Pertinent Medical Findings:
35 y/o F with 3 ER visits for palpitations. One EKG showed possible PSVT.
CPT Procedure Categories
Code
Description
Notes
Notes to Scheduler:
Schedule within 1 month if possible
Outside Vendor Referred To
BROWN,JOHN MD
Additional Medical Information
Days to schedule from today:
0
Payor
IHS
DRG:
Face Sheet
New Referral
Referral Letter
Use Template
Clear
Save
Close

Preparation for EHR

RPMS EHR

EHR Planning & Implementation

Elapsed time (in months)

Please note that this is just a general timeline of how long it might take for your site to implement EHR. Every site will be different, and the amount of time it takes to implement EHR depends upon many factors, including size of the facility, services offered at the facility, current state of RPMS and packages installed and utilized.

*** Most sites contract for external resources to complete pharmacy file preparation.**

RPMS EHR

Preparation for EHR

- Required documentation
  - Site Survey
  - Tracking Record
  - Cost Survey
- Submit to EHR Program through Area EHR Contact
- RPMS system up to current levels
- Hardware/network assessment & acquisitions as needed

RPMS EHR

Organizational Transformation

- Multidisciplinary EHR Team
  - Includes administration, clinical, HIM, business office, pharmacy, IRM, others
- Develop shared vision for the role RPMS and EHR will play in supporting care
- Examine legacy business processes
  - Why do we do it that way?
  - How might it have to change?
  - Realign processes to be less paper driven

RPMS EHR

Organizational Transformation

- Departments take ownership of RPMS packages
  - Assigning user keys and privileges
  - Responsibility for data quality and integrity
  - Running reports
- Discover the leaders
  - Who are the natural super-users?
  - Who is most excited, energized, visionary?
  - Assign CAC functions or hire a CAC

RPMS EHR

Organizational Transformation

- Site Metrics
  - What do we want to improve with EHR?
  - What is at most risk with EHR?
  - Establish baseline and measure continuously
- Optimize use of current RPMS
  - Scheduling – no paper appointment books
  - Immunization – point of care entry, no blue sheets
  - Laboratory – no interim/cumulative reports
  - Pharmacy – paperless refill option

RPMS EHR

Organizational Transformation

- Develop plans for documentation
  - CRS performance measures
  - Who will document what, and where?
- Implementation plan
  - Keep it simple at first
  - Start with the easiest locations
  - Start with the easiest functions
  - Create a critical mass of EHR users
  - No turning back – DO NOT STOP the rollout

RPMS EHR

Clinical Application Coordinator

- Highly recommended for all facilities
  - Part-time to multiple FTE depending on size
  - Area/Regional CAC to support small sites
- CAC skills –
  - Clinical background
  - Computer skills
  - Good “people” person
  - Good trainer (especially of doctors)

RPMS EHR

The Role of the CAC

- Setup of EHR
  - Documentation templates
  - Quick orders
  - Locally developed reminders
  - ICD and CPT pick lists (with coders)
- Training of new users
- Refreshers and training on updates
- Troubleshooting and hand-holding

RPMS EHR

GIVE ME MORPHINE! GIVE ME SOMETHING TO KILL THE PAIN! I CAN'T STAND IT ANYMORE!
I SEE THE COMPUTER TRAINING CLASSES FOR THE DOCTORS HAS BEGUN..
HOSPITAL

National EHR Training & Support

- Lessons Learned – 1 day overview
  - Warm Springs, Cherokee, Fort Defiance, Lame Deer
  - Send 3-4 key leaders
- CAC/Implementation Team training
  - 1 week in Albuquerque
  - Send 4-6 key players
- On-Site EHR Setup
  - Business process review, EHR software configuration
- Various specialty training sessions
  - Techies, HIM, advanced CAC, etc.
- Periodic web-based update sessions

RPMS EHR

Shared EHR Training & Support

- Activities transitioning from National to Area
- On-Site EHR Setup (usually National)
  - Some Areas may elect to conduct Setup sessions
- Super End-User Training
  - Visiting clinician, 3 days intensive EHR training
- Go-Live assistance
  - Hand-holding, troubleshooting ~1st week of go-live
- Other assistance depending on local needs
- *National program can assist with identifying faculty for these events as Area builds capacity*

RPMS EHR

Special Issues

- Third Party Pharmacy Applications
- Laboratories and the Reference Lab Interface
- Scanning and Imaging

RPMS EHR

EHR and 3rd Party Pharmacy

- EHR is part of an integrated system (RPMS) derived from VHA (VistA)
- Provider orders go through ordering package (OE/RR)
- Orders are checked against allergies (ART), labs, other drugs, with notification to provider if needed
- Once finished, med orders become completed prescriptions in Pharmacy

RPMS EHR

EHR and 3rd Party Pharmacy (cont'd)

- 3rd party Pharmacy apps do not interface with OE/RR or Pharmacy, affecting:
  - Computerized provider order entry
  - Order checks
  - Medication list management
- RPMS Point of Sale offers pharmacy revenue recovery comparable to 3rd party
  - Integrated with RPMS Pharmacy
- Some sites using 3rd party Pharmacy do dual entry by pharmacy staff

RPMS EHR

Laboratory and Reference Labs

- EHR transmits orders to and displays results from Laboratory package
- Send-outs to reference labs currently come in on paper
- Bi-directional Reference Lab Interface will be released in Lab Patch 21
  - Results from Quest & LabCorp will populate the Lab package
  - Sets standard for other reference laboratories

RPMS EHR

Scanning and Imaging

- EHR GUI allows text data entry and retrieval from RPMS packages
- Images, drawings, outside documents are not supported
- Requires separate imaging program
  - Scan in documents and link to TIU notes
- VistA Imaging is anticipated solution
- Other commercial options may be suitable for some sites

RPMS EHR

Keys to EHR Success

- Executive Leadership involved from DAY 1
- HIM engaged early in process
- Workstations everywhere
- Train, Train, Train – department specific
- Implement gradually by function
- Liberal use of Quick Orders
- Identify who enters GPRA/CRS data and where
- Regular refreshers & updates
- Strong CAC support
- Active QI program

RPMS EHR

U.S. Department of Health and Human Services
Indian Health Service
The Federal Health Program for American Indians and Alaska Natives

Search Our Site For: go
Advanced Search by Google

HOME | ABOUT IHS | SITE MAP | HELP

Resources for IHS Management

IHS·EHR Electronic Health Record

- IHS·EHR Home
- EHR Clinical Overview
- EHR Technical Overview
- EHR Walk Through
- Preparing for EHR
- EHR Current Status
- Key EHR Program Contacts
- Patient Information Management System (PIMS) Application
- EHR Presentations
- EHR FAQ
- Feedback
- EHR Listserv
- Clinical Applications Web Site
- Login
- Register

Welcome to the IHS Electronic Health Record Website

These pages will introduce you to the Indian Health Service's latest medical software application, the IHS Electronic Health Record (EHR). The site is designed primarily for IHS, Tribal, and Urban (I/T/U) Indian health care facilities that are actively involved in implementation of IHS-EHR, or are contemplating doing so in the near future. It provides a variety of information about the EHR product, as well as links to a number of helpful documents.

The Indian Health Service has long been a pioneer in using computer technology to capture clinical and public health data. The IHS clinical information system is called the Resource and Patient Management System (RPMS). Its development began nearly 30 years ago, and many facilities have access to decades of personal health information and epidemiological data on local populations. The primary clinical component of RPMS, Patient Care Component (PCC), was launched in 1984. IHS-EHR represents the next phase of clinical software development for the IHS.

www.ehr.ihs.gov

th site, we invite you to explore the following pages:

» **EHR Clinical Overview** - Learn the key capabilities of EHR as seen by the user in clinical practice.

» **EHR Technical Overview** - Learn how EHR relates to the rest of RPMS, and the technical and hardware specifications required to operate it.

» **EHR Walk Through** - View the EHR application either through an animated Flash demonstration (with sound) or still pictures and text.

» **Preparing for EHR** - Learn what facilities can do to begin the process of preparation for this new clinical technology.

» **Patient Information Management System (PIMS)** - This page describes the new Scheduling and

THE INDIAN HEALTH SERVICE

Discussion

Superior Health Information Management
Now and for the Future